

**ENGINEERING HERITAGE AUSTRALIA**

**ORAL HISTORY PROJECT**

**TRANSCRIPT OF INTERVIEW WITH**

**GREGORY MARTIN AM PSM HonFIEAust CPEng**

Interviewer	Doug Ayre
Transcriber	Mary Macfarlan History Development Pty Ltd
Date of Interview	28 June 2017
Duration	2 hours 45 minutes

## **NOTES TO THE READER ON INTERPRETATION OF THIS TRANSCRIPT**

Readers of this oral history transcript need to be aware that it is a near verbatim transcript of the words as spoken during the interview that was conducted in the form of a natural conversation between the interviewer and the person being interviewed. Some changes have been made to clarify what was intended to be said and to facilitate the flow of the document.

Much of what is said in such interviews relies upon the accuracy of the memory of the person being interviewed and readers should bear this in mind and judge for themselves how factually accurate the material is. The interviewer has sought to clarify or verify facts and statements made during the interview with the interviewee where this seemed appropriate.

The views and opinions expressed within the transcript are those of the person expressing them in the interview.

Please refer to the notes on the following page to aid interpretation of the transcript.

### **Note 1**

The recording runs for a total of 2 hours and 45 minutes.

### **Note 2**

Where the interviewer has used words such as 'Yes', 'Right' or 'OK' as an encouragement, but not as anything else then these words have not been transcribed unless they are relevant for the context. Commonly used habitual phrases have also been deleted from the transcript.

### **Note 3**

The interviewer has inserted occasional words (which are not in the original recording) into the transcript in order to clarify the context of what was being said. These words are shown in the form [they would say].

### **Note 4**

Where a sentence has a series of dots in the text such as ..... this indicates that the speaker paused, the recording was not clear enough to transcribe accurately what was said or the following speaker interrupted what was being said.

### **Note 5**

The interviewer is referred to as 'DAA' in the transcript and to the subject speaker is referred to as 'GM' as appropriate.

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## INTERVIEW TRANSCRIPT

### Track/ Speaker

### Time

1/00      DAA      My name is Doug Ayre. The date is the 28<sup>th</sup> of June 2017 and I'm interviewing Greg Martin on behalf of Engineering Heritage Western Australia at his home in Perth. Greg, are you comfortable if I refer to you as Greg?

GM      Certainly, certainly.

DAA      Thank you. Well let's start off then with your family background what can you tell me about that?

GM      Well I have my mother and father and my sister [and] basically grew up in Tuart Hill. My father was an accountant and completed his career as Comptroller of Accounts and Audit at the WAGR. My mother was a home-maker and I went to Tuart Hill Primary School and then subsequently went on to Tuart Hill Senior High School. At Tuart Hill Senior High School my focus, - well, it was I think the second biggest high school in the state at the time - my interest was largely in the science side, maths and science side, maths and sciences and I suppose that led to me to following an engineering career.

I suppose the highlight of my time at Tuart Hill Senior High School I was dux and I was school captain so they were a couple of nice awards to get at the end of high school.

DAA      Why were you interested in maths and science?

GM      Well I think it was just a natural inclination. I felt more comfortable in maths and science than I did in English and history and geography. Although I did do a fairly broad course at high school. I did French for three years and then German for two years up to the matriculation and economics so I've got to say I really enjoyed a broad education but I think my natural inclination was to towards maths and science.

1/02      DAA      Right. So, a little bit about your family then - your parents for example?

GM Look, I think they were sort of regular ordinary parents at the time. They came from families where I think the two of my grandfathers from each side of the family were tradesmen. One worked in upholstery. No, sorry, one worked as for the SEC and he was a carpenter-blacksmith. In fact, his claim to fame was making those wrought iron brackets that went onto street poles for street lights. So that was one. My other grandfather was basically a salesman. Grandmothers of course were both home, home-carers, and my sister went to the same school as I. She's about three years younger than I was and she finished up school head girl at the Tuart Hill Senior School so that was nice for the family and nice for our mums and dads.

1/03 DAA Right. You said 'home-maker of course'. I mean, that's very much par for the course in those days, wasn't it?

GM It was. I think my mother worked in secretarial type work until she got married and then of course she had to resign and become a home-maker. That was par for the course in those days.

DAA They did have to resign, didn't they?

GM Yes, they did. So, I think that just shows you what a loss of talent there was in that era which, fortunately, has been redressed nowadays,

DAA Oh, I couldn't agree with you more. Yes. I mean to eliminate 50% of your potential is amazing, isn't it?

GM Yes, of course and that's sort of - not remembering a fact that some of those people are very bright people. And they did home-making very well and did other activities like care giving and voluntary work and so on but they could easily have been earning a wage and pursuing a career.

1/04 DAA Indeed. In fact, my observation - being involved with voluntary organisations - is that in this modern era where those ladies are working professionally, many of them, they're not available to help you and we sorely miss them actually.

GM No that's right. No. I think that probably is true.

DAA You mentioned a sister?

GM Yes. My sister she went and studied. What did she do? She went to WA Institute of Technology and did 'medical technology' I think was the course. Histopathology and all those sorts of subjects. Microbiology. And she pursued that career for some time and then moved out of that and actually, she's just about to retire as a financial planner which she's been doing for many years.

DAA You just had the one sister, did you?

GM Yes, I do.

1/05 DAA Alright. So that was high school.

Tertiary education? Where did you go then?

GM Well I guess when I was getting near the end of high school the dilemma was what course would I follow? I always [had] the ambition of going to university and I suppose my family were very keen to see that happen. I was obviously going to be the first one going to university out of that family.

I had the dilemma of what would I do. And I did a few things. I went and had a talk with vocational guidance officers at the school and also outside the school. That really was very inconclusive for me because it basically said 'you can do whatever you like' after having done all the tests they line you up to do. And so, I sort of struggled [because] that didn't help at all in my view.

But one of the things I did do was I had, through my family's church connection, an opportunity to go out to Vickers Hoskins in Bassendean and have a look at their mechanical [and] electrical operations - their workshop - and I suppose that gave me some sort of sense [of] look, here's something really practical. I had got to the point of toying between being a physicist or doing engineering and I soon came to the fact that engineering was preferable to physics because there were more job opportunities and also the ability to see

practical outcomes, tangible outcomes, from your work and that very much appealed to me. I've always been a pragmatist and a practitioner and so it was pretty easy once I got to making the decision to do engineering. To go ahead and do that.

- 1/07      DAA      And as you implied you've always got to eat, haven't you?
- GM      Yes, that's right. That's right. At the time, I think the opportunities I was aware of was at, sort of, the weapons research establishment in South Australia and I was struggling to think of anything else other than being a long-student or a teacher. And so, I thought no. No that's just not satisfying me so that led me to engineering and I suppose it reflected what I later decided to do in terms of broadening my career opportunities and my education so that I could cover a much wider field than just pure engineering as it turned out.
- DAA      Right. Tell me a little bit about your experience with Vickers Hoskins?
- GM      Look I don't know that I can recall a great deal other than going and seeing real live metal work being done and I suppose pressure vessels being built and cranes being built and steel manufactured. And of course, I'd come from a background where I was a city slicker [and] hadn't had very much exposure to that. I mentioned my grandfather was a carpenter-blacksmith and, in fact, as a young boy I spend lots of time in the back shed with him learning how to do things. So, I did. In fact, many of the tools I still have today were tools that were supplied to me by that grandfather and grandmother.
- I had really, I suppose, I don't know, six to eight or 10 years of training with him in the back shed where I got to the stage of using saws and buzzers and all of that sort of equipment. I suppose that fed into my natural inclination. I enjoyed doing it and I enjoyed - he enjoyed giving me that tuition.
- DAA      That's an important point, though isn't it? I mean it shows how valuable a mentor like that is?



GM Absolutely. No, I had a great affinity for my grandfather and right from a little toddler when I was used to roll around with him on a carpet on the back lawn through to the time that basically he passed away. So, it was good training in that sense and that really [is] what reinforced, when I think back on, the fact of being practical and doing practical things was really important. Seeing the outcome of your endeavours in other words.

1/09 DAA Yes. Something tangible?

GM Tangible, that's it.

DAA Yes, I can relate to that. So, you went [and] worked for Vickers Hoskins?

GM No, no didn't work for them. Only visited. It was [only] an exposure.

DAA Oh, I see. Okay.

GM It was not working for them. It was an exposure. It was just sort of a day trip to go out there and spend time walking around the factory and seeing what people were doing so it was just a way of trying to help me get to that decision point about which course would I pursue at university.

DAA Alright. So, you then came to the conclusion that it was technical area you wanted to be in?

GM Engineering. I think I really focused on that and I suppose the question then was what branch of engineering might you do and I chose civil engineering as a matter of fact. I think when we started off in first year you don't have to make too much of a decision but for some reason I sort of went towards civil engineering rather than the electrical [or] mechanical which were the other options at the time. And so that's what I enrolled in to do civil engineering at the University of Western Australia.

1/10 DAA Right, and when was that?

GM I started that course in 1964.

DAA Right.

GM So, yes, my first year was 1964 and I applied for a Commonwealth scholarship. I went into first year, and won a Commonwealth scholarship. At that time, of course, things were very favourable in terms of supporting students to take on university courses so the government was quite free and easy with their scholarships. That's perhaps not the right term but there were many available and they encouraged people to be going to university at that time.

So that was first year and then during first year I applied for a Commonwealth cadetship which I won which took me from second year through to the end of the course. And the real benefit of that Commonwealth cadetship, of course, was that you had an income which was good for a student but probably more important it gave you some exposure to the work environment because you then worked during the vacation in the department. And that was really good for me because I could sort of see the benefit, or see what my training at university would lead to - what I'd be doing, what I'd be working with and probably the most important thing was learning how to work with other people in a work environment which is something you don't do when you're going to school and when you're going to university. You don't actually learn that interaction with other people in the work place.

DAA Any from my experience, which is very similar to yours, 'there are people and there are people' aren't there?

GM Yes, there are. But look I've got to say it was a very comfortable environment to work in.

DAA Really?

1/12 GM That department was, I think, run by fellows largely who'd come out of the war. Ex-service people. They'd seen the good and the bad side of life and they were there to really make a difference and do it very well. So, they were great teachers in terms of guidance, standards

[and] maintaining standards which I think was really important. Not just, you know, 'anything will go'. No, it had to be right. [It] had to work. You didn't get any prizes for getting something wrong. Everything had to work, there were different ways of doing things but it had to work.

And I think that mentoring and coaching I had through that time was really good. The most important thing, of course, was that it led to you getting very early responsibility and that was crucial so that by the time I'd finished my university course - in fact when I finished the course - I was assigned to the Perth office of the Commonwealth Department of Works which was the home base for me. And, of course, I knew the personnel, I knew the managers, I knew the supervisors, and taking on a real-life job for the first time was pretty straight-forward because they trusted me and I knew what was expected of me by that time.

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| 1/13 | DAA | To use the old cliché, you 'hit the ground running'?  |
|      | GM  | Absolutely. That was really important because if anybody hadn't had that opportunity of work experience - even now if people don't have the chance of real work experience before they start they can over-estimate just really what their value is right at that starting point.   |
|      | DAA | Yes. Just philosophising a little, I've heard other people say that the Commonwealth and indeed the State were fairly generous with the scholarships and cadetships. What was the reason for that in general do you know?   |
| 1/14 | GM  | Oh, look I think they, as I say, many of my supervisors, my senior managers, were men who'd come out of the war and I suppose they were probably in their forties maybe even their fifties some of them. And consequently, they realised there was a gap in their personnel and their expertise and, so, they were very willing to encourage new graduates to come in and they took on quite substantial numbers. They were taking them on every year, a bunch of people, and then in the Commonwealth's case distributing them around the country. And, of |

course, they were doing it in other places too so it was a major program and I think the state government agencies - the Public Works and Main Roads and those sort[s] of agencies - were doing the same sort of thing.

So, a good proportion of people in the engineering school particularly in the civil engineering area were in fact cadets for either Commonwealth or State agencies. I think it was a realisation that they needed to be feeding in some people and getting them trained up so they could take on more senior roles later on.

So, it was a good time. It was a very good time.

DAA Yes. That would have developed a large pool of talent generally, though wouldn't it?

1/15 GM Yes, it was. It was and, as I say, the 'teaching environment' if I can use that term was fantastic because you got to do real work quite quickly. You were given responsibility and, I suppose, in effect you could get pretty quick promotion too if you applied yourself well.

DAA So, I deduce then that being a civil engineer you would have gone into civil construction initially?

GM Well, when I was going through that vacation employment phase I was working basically in civil construction. The sort of work that I remember doing was on one of my long vacations it was going to Swanbourne army camp and helping surveyors do the levelling process that generated Campbell Barracks because that was sand hills at that time and they were doing major development for SAS and others in the army and so one of my tasks one holiday was to actually be a chain man or, you know. a 'level manager' to try and give levels to the people operating equipment to flatten the sand hills.

DAA Oh, I've dragged a chain. They were heavy those 66-foot chains, weren't they?

GM Yes. And another one was we did a taxi-way at Perth Airport which involved sub grade preparation, base course, and then asphaltting. So,

all of those things gave me some exposure. That was the civil engineering but in fact when I started work I really worked as a structural engineer so my technical engineering career was structural engineering.

DAA Okay and what sort of structures?

1/16 GM Well when I started I started off in a design office and was doing oh any of the work that was coming into the Western Australian office. It was post offices. I remember the postal exchange in Stirling Street was one of the jobs I worked on. I remember also even as a student - a late stage student - working on the pouring of the raft for the Commonwealth Tax Office on St Georges Terrace which is now the Duxton Hotel. So, it was quite a range of things but I got basically led into the structures. I enjoyed that. I suppose I'm coming back to the maths, the science analysis, that sort of area led me into dealing with structural engineering.

DAA So, most of those buildings you mentioned - the foundations and the basements this sort of thing - they would sit on the solid concrete raft but I presume the buildings were steel structures, basically, were they?

GM Well, no. Well the what's now the Duxton Hotel was totally concrete.

DAA Was it?

GM It was reinforced concrete.

DAA Reinforced?

1/18 GM Yes. There were steel structures and small buildings like post offices and those sorts of buildings were typically steel framed buildings with cladding on them but any of the more substantial buildings were typically concrete. And at that time, I think there was a fair bit of industrial activity around the steel industry which made it a bit challenging if you were going to do a major project and I suppose cost was favouring the concrete industry at that time.

So, they were the first things. As I say, I started off doing design work and then I graduated to construction and I think I was doing design

work only for about a year or 18 months and then I was on construction and one of the reasons was they had some bigger projects going where they needed somebody to come into the structural area. And one of the projects that I was the resident engineer for was the Reserve Bank building in Perth which also is on St Georges Terrace, 45 St Georges Terrace, it's now – wouldn't be recognised as a Reserve Bank building.

1/19      DAA      I know where it is but I wouldn't have recognised it.

GM      So, it had a major raft on it and it was deep in the ground so there were dewatering issues and water-proofing issues for that. [There] was a heavy steel structure all the way to the top and then it had vaults downstairs and a whole lot of security built into it.

One of the interesting things I remember about the steel structure was I had some people come down to inspect it one day and I thought 'oh well, I'll show them' so I headed off across the steel framework walking on steel beams and looked back and realised they were standing at the edge looking over the edge and that just taught me 'hang on, this shows you how you can get familiar with your work environment and quite comfortable'. There [were] no cables, no tethers, none of that sort of thing but a level of confidence you build up as you grow with the building. But anybody who comes along separately says 'hey, hey, this is a bit risky'. So that was an interesting wake up call for me.

1/20      DAA      Yes. I 'cut my teeth' on steel transmission towers. Exactly the same.

GM      Yes, that's right. No, look, that was a really good time. I enjoyed it. I enjoyed outside work and at the same time I decided I'd like to [do] a commerce degree. So, I took on a commerce degree part-time which was largely in that time [that] I was also working as a construction engineer. I did that for a few years and that was good grounding.

Really, I think [that I] took what I learnt at university, took it through the design phase, took into [the] construction side. I'd seen the whole

ambit and that sort of, I suppose, created a bit of an appetite for what I was going to do next.

- 1/21      DAA      Yes. Just coming back to building works in Perth I understand that Perth CBD has a fairly high water-table then, does it?
- GM      Yes, it does. It's got a high water-table and it's got a mixture of clay and sand seams so the water flows.
- DAA      Right.
- GM      So, it's a bit of a challenge to make sure that when you're digging basements into the ground that you, we, have to dewater while that's going on. That can have implications for adjoining buildings. If their foundations aren't so substantial you do de-watering of the surrounding ground you could potentially cause some problems to older buildings and then of course once you've built your tank in which you're building your building you've got to make sure it's water tight otherwise you've got continuing problems of water ingressing into the basement. And if you've got a Reserve Bank with holding paper notes and things like that you don't want too much water and moisture in your basement
- DAA      No not good. So, did you do steel sheet piling or anything like that?
- GM      Oh, look it was slurry - slurry walls. Slurry walls means that you dig a trench, you fill it with bentonite slurry, you put a reinforcing cage in then you fill the trench up with concrete [and] displace the bentonite clay. So, in effect you're trying to build a cofferdam with concrete walls.
- DAA      Yes. Well I'm pleased you know what you're doing. But keeping water out would be a real challenge [wouldn't it?]
- GM      Yes, well there's always the problem that even the merest of leaks you know finds a way through when it's down at depth but the water outside the wall is quite deep so it does challenge [you] to keep things water-tight.

- DAA I remember reading somewhere that they were always pumping Boans basement - something like that - so water was a long-term problem. You mentioned a commerce degree where did you do that?
- 1/23 GM Well I did the commerce degree at The University of Western Australia. I think one of my realisations when I was working was ‘gee, engineering is fine but you need to have a broader skill base than just engineering base’. At that time [the] engineering course was not like it is now where you can do it in connection with economics or other sort of disciplines so it was a pretty dedicated engineering course. I felt that I needed to have a broader perspective [in] economics and finance and even organisation and so I decided to take on a commerce degree which I did part time. I think it took four years to complete that and that nicely tied in with the time I was working in construction so a little bit of flexibility being a construction engineer and a supervising construction engineer gave me the flexibility to attend the courses and the tutorials I needed to. But I really enjoyed that because I found it I won’t say easy but easy to do or easy to engage with and so I really enjoyed that.
- 1/24 DAA You’d be able to relate it to what you were doing wouldn’t you really?
- GM That’s right. You could see how an organisation works, and how you have to deal with people, the industrial relations side of things. So, it all played into it as well as understanding why things are being done.
- DAA Yes.
- GM Engineering is what you’re doing. It’s ‘understanding the why’ which is something that you learn from a broader perspective.
- DAA Yes, indeed. Comes down to the finance in the end usually?
- GM Well that’s right. There’s got to be purpose in everything and I guess that’s one of the things you learn as you go through your career. If you don’t understand ‘the why’ and the purpose then, hang on, you’re not going to do the right thing and you’re not going to do it well.
- DAA Well as you say you’re not going to do the right thing which really



means you're not well grounded to make sensible decisions in many ways?

1/25      GM      That's right. And I guess the other realisation was that if you're going to progress in a career-sense to more senior and more responsible roles being a pure engineer is not going to be the case because maybe if you're a specialist technical consultant, okay you can make a living as a technical specialist consultant, but you're not going to be able to run businesses and run organisations necessarily unless you've got a broader perspective.

Now that doesn't mean that people who have a technical background can't learn by experience how to run businesses but I thought going and doing some extra tertiary training education was going to be helpful.

DAA      Alright. You married?

GM      Yes, in fact that finishing of that commerce degree coincided with two or three things. The first thing I did in that last year was apply for a position in the Department of Housing and Construction as it turned out to be. Not the Department of Works [but the] Department of Housing and Construction, Same people just a different name. It was located in Melbourne it was the central office and I applied for a structural position in the design office of central office at the Department of Housing and Construction in 1972. At the same time, I applied for a Commonwealth post-graduate scholarship to study in California - structural engineering - 1972. I won the job in Melbourne. I also won the scholarship and I needed to make up my mind what I was going to do [together] with my girlfriend at the time, and we decided to get married. So, we got married in December 1972 and went to Melbourne in January 1973.

DAA      So, it was an eventful year then?

GM      Yes, it was. Turned out to be quite a turning point.

DAA      What historians call a hinge point.

GM Yes. So yes. Quite a lot happened there but it was a nice end to a chapter I think of finishing university, going to work, doing an extra degree, and then sort of pitching for the next target - the next job.

DAA Alright we'll just pause there.

2/00 DAA Okay, so you've married and you're in Melbourne?

GM Okay. Let me just explain a little bit about the role. The role in Melbourne was in a head office of the department so it had a number of specialists: a welding specialist, geotechnical specialist, a computer analyst and those sorts of people. I was sort of like a general practitioner, a design practitioner, in that office so I had some people really working for me but I was working in conjunction with these specialists. And we were oversighting certain projects across the country. We were sort of trouble shooting if there was [a] problem occurred across the country. And the other thing we were doing was we were sort of developing directives and standards that should be applied to structural engineering works across the country.

So, it was a change of tack for me having come from outside and enjoying the construction work. It was a matter of now looking at problem solving and projecting forward and trying to develop directives and design guides without trying to limit it. But it meant that you had to understand more about the makeup of design codes, for example, which everybody in the regional areas probably just took for granted and applied. It was a matter of understanding when they were applicable and when they didn't apply. So that was a technical specialty role.

I think the major project that I remember working on in that time was the Omega navigation facility which was built at Darriman in Victoria. It was a 427 metres high [guyed] steel lattice-frame structure and it was one of I think only two or three in the world. It was only one of three or four in the world which was used for very low frequency communication with submarines so it was basically a project sponsored by the US Navy. They had, I think, a facility in

North Dakota, one in Liberia and one in Victoria. And basically

.....

DAA There was one in the south of England as well.

GM Was there? Okay. Basically [they were] able to communicate with submarines world-wide.

DAA From what I know from my electrical days the very low frequency transmission didn't attenuate as it went through water: well not as much as high frequency. Is that right?

GM I think that's probably right but I don't know about that side. I was basically responsible for the engineering - the structural engineering side and obviously there was communications and electronics and [other elements].

DAA Were you involved in the design of the mast?

2/03 GM No. The design was basically to replicate what was done in the other places. The design was done by a company named Holmes & Narver from Orange Country in California for the US Navy and that was basically the structure we had to reproduce.

The Australian government decided that they wanted to use Australian steel, they wanted to use Australian expertise and they wanted to Australianise the design and that was evidently agreed. And so, we replicated it but, of course, we had to apply our design standards and our analysis to that exercise so that made it, you know, a thoroughly properly designed Australian project even though the outline and the geometric requirements were the ones that were prescribed from the US.

DAA And did we do a good job?

GM Well I believe we did. I can say that I was given the role at the completion of the design to take the design calculations to America so that Holmes & Narver and the US Navy could vet the design and make sure they were satisfied with it. I took it first of all to Holmes and Narver in Orange Country, California, and I remember being

there for a couple of days and not much was said because I'd handed over these volumes of calculations and the design details. And sometime after I'd been there waiting to get some reaction they came to me with a worried look on their face and I thought 'oh oh this is not looking good'.

What transpired was they'd done a check of our design and realised that they had [a] failing in their particular design. In other words, they'd had either some mistakes made or something was done incorrectly and so what they did is they established that we our design was correct and they had some shortcomings in the design they'd done in the past. I don't know, I can't recall how significant that was and probably that wouldn't have been disclosed to me anyway - how significant that was or what remedial action they might [have] to take but nevertheless that was reassuring to me to know that our team had done a really good job.

DAA Yes. I'm just going to pause. Right so that I think makes the point that having a fresh pair of eyes, albeit from a team of engineers; look at a project often reveals things that have been passed by people that are very close to it and have been in the past.

2/06 GM I think that's right. I think - I give full credit really to the fellow who did the computer analysis. It was a dynamic analysis required and a non-linear structure so there was plenty of scope for that to be got wrong and I think the fact that the analysis dealt with this guyed tower which was non-linear and gave the designers of the actual structural elements the right indication of what they needed to do. That was really crucial and I suspect that our computer analysis was more complete and more accurate than what had been used previously.

DAA Right. There'd be a fair bit of movement in a structure like that?

GM Yes, there is but, you know, you've got a number of guyed levels up this mast and you've got to get everything working so that the mast survives.

So, as you say - if you've worked in the transmission industry - you would know just how crucial that is be they telecommunications towers or whatever.

I guess the other particular occurrence during that period that I was working in that office was Cyclone Tracy [which] occurred through that time in Darwin and I had been working in that office on some cyclone speed predictions around the country. There was a concern at the time that the code for design speeds around the country particularly in northern Australia was [in]adequate. So, I'd been doing some work in simulating what hurricanes could produce - hurricanes or cyclones could produce in northern Australia and because of that background when Cyclone Tracy occurred I got hauled into an investigation team that went up to Darwin immediately after the cyclone for the purpose of assessing what happened and why did it happen what should we do to overcome that in the future. And, of course, people who were in Darwin or have seen the results of the cyclone that occurred in December or on Christmas Eve in December 1974 whole houses were just wiped off their platforms and almost total destruction. It was hard to understand how extensive that destruction was.

2/08      DAA      I presume that it's a great learning experience from a point of view of a structural engineer, isn't it?

GM      Yes, I mean a lot of the damage was in single level residential or residences sitting on stilts as you know in the Darwin area. But the fundamentals still apply and so the question was 'what was the wind speed, what design would have been used, was there design for some of these residential buildings, or was it adequate?' and then 'what should be the requirements for a rebuilding exercise to make sure that they could withstand another storm of the nature of Cyclone Tracy?'

I mean I think the only indication of what the wind was [at the time] was the anemometer at the weather bureau and of course that failed once it got to a certain level. I can't recall exactly what the figure was

I think it was about 117 knots, or something, was the wind gust speed at the time. But it failed so who knows quite what the ultimate speed was.

DAA You just know it was more than that?

2/09 GM Potentially more than that. But the other tell-tale was that building construction had been done in a very casual way. Blocks had been stacked one on the other. Skew-nails had been used to fix roof sheeting into timbers so when you thought about it there was really no resistance to a serious blow and so nothing was tied down to an anchor in the footings or in the ground. And that was the major finding was that in future everything needed to be tied down sufficiently anchored into the ground. The buildings that did survive - well the residential buildings that did survive well - were the old-fashioned ones which were hipped roofs, low profile, with Masonite wall sheeting on the internal walls which gave it a rigidity. And, of course, the hipped roofs acted almost as deflectors of wind over the top. So, with the rigid box type structure of the houses plus the hip roofs basically meant that they survived where the more modern buildings - more modern - the ones sitting on the top of platforms - basically just got wiped off.

So that was interesting and then the team I was in was also looking at the effects of storm surge looking at what urban redevelopment should occur because we were Housing and Construction - the department I was in - so we were worrying about 'what's the urban redevelopment going to be?' as well as 'when you build it is it going to be strong enough?' and 'are you going to build only in safe areas rather than areas that were vulnerable in a storm surge?'

So, it's a very interesting exercise that took us about three weeks to do that sort of evaluation.

DAA So, I mean, I know that there was a tremendous amount of wind damage but was there damage from storm surge as well?

- 2/11 GM I think there was. That wasn't part of my particular role. Some of the people in the team worried about that. But then the argument comes as to, you know, 'what are the probability levels at particular locations?' and that starts to impinge on private property and so, some of the analyses were suggesting that some of the areas that had been occupied perhaps shouldn't be occupied in the future because the risk was too high. But then that becomes a political argument as to whether that risk level is accepted or not accepted and I don't know what the outcome [of] that [has] been but, as always, I think it's important from an engineering point of view to give that assessment and then if other decisions are made about whether that's going to be accepted or not that's another matter, but as long as that analysis is done with the best of intentions and the best of knowledge I think that's what the community needs to know.
- DAA Indeed yes. Get the facts yes. Okay.
- Were you involved with the reconstruction of Darwin at all?
- 2/12 GM No, I was not. I was part of this team for Housing and Construction but there were a lot of other deliberations going on in terms of what would happen in Darwin and how it would be rebuilt and what were the policy settings for it so no I had no further role other than within our department we went ahead and developed design guides for builders and [residential building] standards and those sorts of things that could be used largely for Commonwealth agencies or Commonwealth government agencies. But then of course Northern Territory was largely dependent on Commonwealth government direction anyway.
- How far those were applied and how well they were applied I don't know. Obviously in my visits to Darwin since then there's been major redevelopment and the place has been rejuvenated and looks pretty good but I'm not sure they've had another Cyclone Tracy since 1974. But I think one would expect it would perform much, much better than it did in 1974.

- 2/13      DAA      Well, let's hope so. Okay.
- So what else was involved in your work in Melbourne?
- GM      Well, I also decided to do another course while I was doing this technical specialist role. I went and did a Graduate Diploma in Urban Systems at Swinburne College - Swinburne College of Technology - which was just up the road from where I was working in the department. I did that part-time sort of evening classes and a graduate diploma in urban systems was all about town planning, urban design and urban sociology, urban economics - those sorts of things. So, I was working in a housing and construction department and that obviously leads to questions about your considerations when you're doing urban development. So, it fitted rather nicely into what I'd done after Cyclone Tracy I suppose. That opened my eyes to 'hang on, if we're in the built environment then we'd better think about how we should consider the built environment'. So, I think 1975 through '77 I did this Graduate Diploma.
- So that was just another addition to my knowledge bank I suppose - or my formal knowledge bank.
- DAA      You were building it all the way through, weren't you?
- GM      That's right. That's right. So that was till about 1977. In 1977, I applied [for] and won a job in the Victorian office of the department as the structural engineering specialist. So, I was the Principal Structural Engineer in the Victorian office of the department from 1978 on. So that was really moving out of the head office environment where you weren't doing design or oversighting day to day design you were dealing with codes and standards and special projects and problem solving and trouble shooting and those sorts of things. So, I got back into if you like the main stream of the Victorian office in about 1978.
- 2/15      DAA      Did you find yourself working on national bodies developing codes and standards?



GM I had a little bit of involvement but not directly. I was often developing or doing some work for my supervisors who were the ones who were the representatives on the code. For instance, I talked about that wind speed prediction in Northern Australia. My direct boss was on the wind code of Australia - the Standards Australia wind code [panel] - and so he was doing work and I was doing work feeding in to him. But I wasn't personally the one sitting in code committees. But it gave me an appreciation of that work.

It also gave me an appreciation of how some of the codes have limitations which aren't obvious to people unless they have a good understanding of codes. You know, there are codes [which] are often built up based on research studies and experience and practise but there are usually boundaries and they're not necessarily very clear in the code, and so I developed, if you like, a respectful scepticism about codes believing that you really needed to know what you were doing and you needed to make an assessment of whether the code was going to do the job you wanted it to. Don't just rely on following a code and doing it - a design - according to a code and then hoping it's going to okay.

So, I think if you knew you were on mainstream stuff that had been well researched the code's fine but if you're on the edge of the code and you're having to make some judgements be very careful because you might be extending beyond what the code is based on. So that's something that I learned I suppose by being in that environment.

2/17 DAA And I suppose that implies that the codes are really no substitution for sound engineering, are they?

GM Well I think they're very important but they're not the only thing.

DAA Yes.

GM And so, I think particularly when you get into senior roles you need to have a broader understanding of what the limitations might be or you have to find some ways of validating what you're doing to make sure

that it is in fact going to achieve an outcome you want.

DAA Yes

GM And I suppose structures is always [important but it] probably applies in other disciplines of engineering too but in structures it's absolutely essential because if you get it wrong it might not be a catastrophic failure but it might be a very costly failure or a discrepancy that is not easy to recover.

DAA I certainly learnt from a couple of mistakes I made which cost my employers some money but they were very generous to me.

2/18 GM Oh no, things can happen but I suppose [in] your role as my supervisor said when I started work it was 'nine out of ten's not a pass mark'. Five out of ten's definitely not a pass mark. Nine out of ten is not satisfactory either. It's got to actually be ten out ten. You've got to actually get it right.

And I suppose that was something that got drilled into me at the beginning and then I built on that and then I realised that codes are not necessarily 'God's gift'. They are an assistance to you and you do have to comply with them and if you depart from them you've got to be able to explain why you've departed from it. But, nevertheless, that's still a responsibility to make sure that you are making the best judgements you can.

DAA Yes. The key word being 'judgement'?

2/19 GM Yes, that's right.

So, I guess let's talk about going beyond that. I worked as that structural engineering specialist in the Victorian office for a while and then I had the opportunity of becoming a project manager and that arose because the volume of work that was going through that Victorian office was substantial and they had a need for a senior project manager and I guess that was an opportunity that when it got floated in front of me I jumped at. Because, I suppose, I'd done as much as I felt I needed to do as a technical specialist. I had all these

other broader interests that I'd sort of cultivated along the way and I thought becoming a project manager is great. Now that gets you into the stage of actually guiding and directing what's going to happen. It gets to you to dealing with a client, finding out what they want, why they want it, giving them advice about how they might go about it and then executing the project.

So, I got into that role. I had major clients in Victoria at the time, which were Telecom and Australia Post [and the] Australian Wheat Board. They were my [clients]. I had a bunch of clients that I was working for in delivering their projects and they had substantial works in Victoria at the time and I really enjoyed that. In fact, I suppose I enjoyed it even more than the technical specialist because of the breadth of interest it brought to the job.

- 2/20      DAA      You mentioned the wheat [board]. What were you doing with them?
- GM      Australian Wheat Board? Ah, yes, they had a proposal to build a new head office in Melbourne and that was an interesting exercise that didn't come to fruition. Because I went along to give them a briefing about what we could do and they said 'that's great, that's fantastic' and then as we started working on it all of a sudden there were challenges to what their authority was to get a new building done. So that didn't actually lead to a finished job but for Australia Post and Telecom there was a lot of work. We fitted out many floors of Collins Place Tower for Telecom.
- DAA      Sorry, what was that again?
- GM      We fitted out many floors of Collins Place Tower for Telecom.
- DAA      Oh yes.
- 2/21      GM      We did suburban telephone exchanges. We did mail distribution centres. We did many regional post offices. There was a whole range of projects. Many of them not that large in money terms but very numerous and of course all having to do the work.
- DAA      Yes.

GM        So being a project manager I really enjoyed and in fact I think I'd moved into that project management role about the time I went to California with those design calculations for the Omega navigation facility because the project had moved at that stage from design into construction and there was a construction function in the Victorian office. It went from the head office where it was designed into the Victorian office where it was constructed.

DAA        Yes. In the late .....

GM        Seventies?

2/22       DAA        Nineteen sixties. I had to think there. In the late 1960s, I was a projects engineer and I well remember doing the PERT charts by hand.

GM        Yes.

DAA        You would have had some exposure there I suppose?

GM        Yes, well I think we were having to predict expenditure flows and budgets, and timing [and] coordination because that was crucial for [the] operating agency particularly Telecom and others who were sort of scheduling a whole lot of equipment supply and equipment installation and so on. So, yes, that was that was work that we had to do and of course there was always the question about 'on budget' and 'on time' [which] was the big challenge.

DAA        Specifying everything and then acquiring it?

2/23       GM        And, of course, that was that was where I really had to interact with other disciplines of engineering and architecture and quantity surveying and so on. So while I'd been working in civil structural engineering, working in that sort of discipline - I hadn't really had a lot of interaction with other disciplines - but once I got into the project management role yes it was and we had quite rigorous processes at the time to do review of projects in during the process of design and implementation and one of my mantras was I used to bring technical specialists in, in review panels, to look at progress through these

projects and my argument was 'here you're not here [just] as your discipline. Yes, you're here as your discipline representative but you're here as a panellist. You're here to review the project. Is it coming together right? As a panellist, not just as an electrical specialist or a mechanical specialist or whatever'.

Hard thing to get over to some engineers who saw themselves as worrying about just their particular discipline.

DAA Yes.

GM My answer was 'no, that's useful but it's not what I'm looking for. I'm actually looking for more than that'.

2/24 DAA Yes. I think you and I have had very similar views of the world in that I've always tried to be a generalist rather than a specialist and you found yourself coming across specialists who were magical in their field but had a very narrow view of the world?

GM Yes. I think when I look back over my career yes it was the generalist that appealed to me. I like to be able to be specialist enough to worry about detail but not specialist solely, and the bigger picture has always been something that's appealed to me more so and I didn't really, I suppose, realise that as overtly as I do now but the fact that I did other courses, tried to do [and] engage in other things and change my role. Even though I stayed in that Commonwealth department for many years, probably just about up to 30 years when you analysed it, I was changing roles sufficiently frequently that I was getting rejuvenated in a career sense.

2/25 DAA Yes. Alright. So, you had project manager's role? Did you do any further study?

GM No, I think I [worked out] how many years I'd been going to school. I think by the time I was 27, or something like that, I worked out how many years I'd been going to school and university I thought 'no, I'm just going to get on with life now'.

And so, from in Melbourne I was that technical specialist [and]

project manager. In 1981, I applied for an Associate Director Projects role back in Perth. Two things about it, I became the manager of project managers for Western Australia and also it meant the family could come back because we'd had three sons in Melbourne at that time. Come back to Perth the kids could see grandparents and, you know, that connection would be made. So, there were two prongs one was a promotion back to a place I wanted to come with the sort of role I aspired to and then also some family benefits too. That was really good. Once again, I was returning home in more ways than one because a lot of the people I'd worked for before I went off to Melbourne were still there and so I was quite welcome.

In fact, one of the nice things for me personally was I came back as the Associate Director Projects overseeing project managers. Many of the project managers were much older than me [and] had been project managers before I went to Melbourne. So, you know, that potentially was going to be a challenge because 'how's this younger guy coming back over the top?' But it wasn't evident to me that that was a problem.

DAA Yes, well you would have done well because you'd have to manage that with care?

GM Yes. So that was good. I think obviously, you know, the state manager at the time and other senior people in the place had obviously made the decision to appoint me.

2/27 DAA Yes.

GM They wouldn't have appointed me if they didn't want to.

DAA Well I assume that's correct. It's usually right, isn't it? <sup>1</sup>

GM So that was good and look I really enjoyed that period because we had a lot of work on. I wasn't working just for Telecom and Australia Post now, I was working for Defence, Veterans' Affairs. All of the Commonwealth agencies that were getting public works done in

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<sup>1</sup> Humour at this point.

Western Australia. And, at that time, we had projects like RAAF Curtin being built in the [area] near Derby. We had HMAS Stirling being developed with particular facilities - extra facilities – [and] at Campbell Barracks for SAS counter terrorism training. We had wards and theatre blocks at Hollywood Hospital [for] Veterans' Affairs. We had the international terminal building at Perth Airport being built. So, in that era there was quite substantial work going on around the state.

2/28

DAA

A very broad base I would suggest?

GM

Yes. So that was a really good period. So, I was doing that work I suppose until around about 1989 so that also meant that I was - no in fact I was - when was it? It was through that '80s period anyway. And that led me to having quite a lot of interaction with eastern states, with that head office I talked about, and with other states. I was tangling in Project Management Association at the time. I was President of the WA Project Management Association for a while. I was also - what I have neglected to say - just before I left Victoria I was Chair of the Structural Branch of the Institution of Engineers. I'd had a period on the Civil College Board as a representative of the Victorian Division so I had some (direction???) from Engineers Australia involvement at that time. Unfortunately, that dropped away once I transferred back to Perth to take on the Associate Director Projects role.

But perhaps I just digress and talk a little bit about that Structural Branch in Victoria?

DAA

Please do.

GM

That was an interesting period of time. I was on that committee for a while then. I think I was Chair for one or two years I can't remember specifically but we had a very good committee for that branch at the time. They were senior people from consultant agencies there were some government people but largely private consultants. Very energetic and active and we decided at the time that we were in competition for people's time to come to technical meetings and the notion of having you know 10 or 12 meetings a year turned out to be a

bit silly. We thought 'hang on, we're competing with people. Many of our members could be going to other concrete associations or steel associations or whatever other meetings so what can we do to be a bit distinctive? What can we do differently that would reward our members and attract them to us?'

And we decided to have I think about five or six meetings a year for our members and we decided to expand them make them a bit grander. I remember one was we had an afternoon / evening seminar on building products. Often difficult to get responsible information about paints, fasteners, sealants, these sort of things. Commercial products that structural engineers needed to use. Bearings that structural engineers need to use. But how do you get authoritative information rather than just read a brochure or listen to a sales person? And so, we ran this seminar. I don't know maybe from four o'clock in the afternoon had a meal in the middle, at sort of six o'clock to six thirty, and went through till eight o'clock so that people walked away with presentation, some notes, substantial body of information and good value for money.

So, we adopted that sort of approach to the sort of meetings we were having at that period of time. Just so that it was recognising our customers, our members, but giving them some value. And also, I suppose, not just filling in a meeting with a make-up sort of topic but something that we thought would be a good draw-card,

And I still think that was a pretty clever move. I'm not sure who came with the particular idea but it was one that really hit the spot.

DAA      Alright we'll just stop there.

3/00      DAA      So, you're back in Perth. We've talked about your interactions with the Institution and various other organisations. Your work involved the naval facility down at Garden Island. Did that involve you in the construction project management of things like ports and harbour facilities?



GM Yes, it did. I mean, a lot of HMAS Stirling was done before I took on this role. In fact, before I went to Melbourne I had some involvement in doing some of the investigation work before HMAS Stirling was built. For example, there was always a question about what flow of water occurred from Cockburn Sound out to the open ocean and back again across between Garden Island and Point Peron. And I remember a period of about a year of [when] every week, or every fortnight, going in a small boat doing current meter soundings across that channel to work out what was the flow of water in or out and was it seasonal. And so that was just an exercise I remember doing for about a year. So, while I was in Melbourne a great deal of HMAS Stirling was built. But when I came back there was work - so the department here had been involved in that development of HMAS Stirling - when I came back one of the really interesting exercises was a submarine escape training facility that we built at Garden Island.

It was a unique facility which basically was a tank where people could train escaping from a submarine into this tank. So, it had to have all the pressure conditions required on the hatches and so on to simulate a submarine being sunk and people having to escape. And that had lots of interesting features because - I forget the real-life submarine - if this particular facility led to people dying [while] going through training this was not going to go too well. So, it had to have a lot of safeguards built into it as well as simulating the escape from a submarine. So that was a very interesting technical project that had to be developed.

DAA It certainly would because you were trying to simulate a hazardous situation but managing the hazard, aren't you?

GM That's right. It's a training facility.

DAA Yes

3/03 GM So that was interesting and, of course, we worked on counter-terrorism facilities at Campbell Barracks for training for SAS elite counter-terrorism troops to learn how to do their craft. Very

interesting work and highly specialised and absolutely crucial that it was precise and accurate because you wanted the operators to be precise and accurate when they were in operations. So, it meant that there had to be a lot of care taken in protecting them while they were doing their training.

DAA Once again you had to manage risk, didn't you?

GM Yes. So that was a fabulous time with those sorts of initiatives going on at the time.

DAA You touched on the Curtin air base. You were involved in the design of the runway pavements and that sort of thing?

3/04 GM Yes. I wasn't particularly but the people within the organisation were. And, of course, the interesting stuff about the Pilbara - not the Pilbara the where are we at - in the Derby area - in the Kimberley is, of course, you're trying to build it out of the red dust and that's got very peculiar characteristics.

DAA Really?

GM Very hard to work but if you get it worked right with just the right moisture and the right working you can make it as hard as concrete.

DAA Really?

GM So, it can be fantastic but if you get it wrong it won't work. It turns to quagmire. So, there was a lot of, I suppose, geotechnical work done to establish not how you can do it in a laboratory but how you can do it on a large scale up in the Kimberley because you want it to be substantial. You want it to withstand the weather and you've got to be able to take almost as big a military aircraft as is likely to fly in there. So, it was a very interesting exercise and then, of course, it had to be stand-alone [and] had to have all of the fuelling and communications and all of those facilities for a forward RAAF base so it was a big project.

DAA One tends to forget that highways and pavements and runways and

this sort of thing they tend to wear out with use, don't they?

GM Yes, and it depends - I mean there's always an economic judgement - as to how you build the pavement. You can build to the gold standard but it'll cost you gold quality money and so there's always a question about what is the use and what is the right balance between cost and utility.

But that RAAF Curtin base was a very interesting one and I think this is a case where, yes, you can have all the theory in the world but it's the practitioners who know [the] materials, who worked with these materials and can trial it and establish through empirical work as much as theoretical work how you're going to make it work. And then of course you can do that in trials then you've got to make sure you bring in contractors who can actually deliver exactly that formula in building a substantial quantity of that work. So, it was, as I understand it, a very successful exercise.

3/06 DAA And then, as you and I know, the project engineer or manager is the person who makes sure that they've actually done what they were contracted to do?

GM Well that's one of the things that was really a strong part of my upbringing was the fact that you had good design against good standards and then you had supervision of the construction. You actually had people standing by watching that it was done the right way so that you could at the end of the day say to your client - whoever your client is - this is what you got. This is what you asked to get, this is what you got, and we can vouch for it.

And that was great for me as a young engineer to work with old-hand supervisors who didn't know the theory but you didn't know the practice. Sorry, they didn't know the theory [but] they knew the practice. You didn't know the practice [but] you knew the theory and it was a matter of rubbing with those people until you sort of accumulated the practice to go with the theory.

DAA You put the two together?

GM But they were always interested in referring to you. I found these guys they didn't disown young engineers but they appreciated interacting so that they learnt something while you're learning something. It was really good.

DAA Yes, I found that too and, of course, we mentioned earlier the cadetship and that would have played its part, wouldn't it?

GM That's right that's right. Do once again when I started work after university I knew the supervisors I'd be working with because I'd already seen them through my vacation employment.

DAA Yes, and they knew you of course?

GM That's right. That's right.

DAA Yes. Alright. So, you worked in Western Australia for a while. What happened then?

3/08 GM Well I ...at the period after I was the Associate Director Projects there was a bit of dynamic but I eventually became the State Manager in WA for what was then called Australian Construction Services. Same department, same function, but a different name.

DAA Yes.

GM I was State Manager for a couple of years. What had happened through that period was from about 1983 when Bob Hawke and Paul Keating sort of came into government the Commonwealth changed from being the 'old regime' where a department like Housing and Construction was the one who decided what we'd do for other clients. If we were going to build a building, or going to build a runway, or going to build some defence facilities, we were the ones who basically said 'what do you want? Oh, you want a runway? Oh, we'll tell you what to do, where it'll be, how it'll be built and we'll build it for you.' So, we actually told clients what they were going to get and what they could have. When Hawke and Keating came in they decided as part

of the reform process that's not the right way. The clients who have the responsibility in the end for that facility ought to decide how they get that facility. So, it changed it completely and by the end of the '80s departments like Housing and Construction and others who were providing those services to clients had to respond to the clients' needs rather than tell the client what they could have which meant quite a big change.

So, it meant that we then had to be ready to make a proposal to the client and they were given certain freedom not to use us if they didn't want to. They could go to the private sector. They could go to other sources. So that meant a complete change of culture and by the end of the '80s my department had been, sort of, rolled into what was called the Department of Administrative Services which combined, I think, 23 different business activities from nine different portfolios into one new mega department where they were providing services to clients. Defence, Veterans' Affairs, Telecom, Aviation, and those agencies could use us and our suite of services or they could choose not to. It meant that our services had to be able to respond in a way that, in effect, made those clients want us or else we 'died on the vine' because no one wanted to use us.

So, it meant we had to have a more commercial culture, a better relationship with the clients, and we had to develop a trusting relationship so they wanted to use us and could rely on us.

DAA      Mmm.

3/11      GM      And so, at that time when this change occurred I became what was known as the Regional Coordinator for WA and South Australia. So, I was Regional Coordinator for Department of Administrative Services. This occurred in about 1990 and I had responsibility for overseeing 23 business units in this department serving other Commonwealth government agencies. So, my role was very much a relationship builder - an intermediary, a facilitator, a coordinator, a trouble-shooter, a business development manager. All of these

activities. So, I was a link between the major department who wanted to see these separate business units prosper and the clients who were hopefully drawing on their services.

DAA Mmm.

3/12 GM Making sure that was working. Making sure that these services work together if they needed to put a package to a client rather than the client have to do the bringing together of the people they wanted to work with. We needed to package stuff together so the client saw what was being offered to them. So that was an interesting different role.

DAA There'd have been a bit of a challenge there because without being unkind I'm sure that a lot of clients didn't really understand what they needed?

GM Well I guess you could argue that always was the problem for the department in the old regime was you asked the client what they want and I think one of the things I learnt was [it is] not easy for somebody to say what they want. They have a general idea but sort of if you're going to provide something you say oh give me more detail tell me specifically [what you want] and they say 'I don't really know' you know. 'I've got this need but I can't articulate it.'

And one of the things that we needed to do in the old regime and even in the new regime is say 'let's sit down with you and see if we can thrash out a specification or a definition of what your problem is and what you think will solve it.' Because the client doesn't necessarily know what's going to solve their problem.

DAA No.

GM The service provider doesn't necessarily know that they've got the right handle on what the problem is. So, I think that's very useful stuff in any day and age now between a client and a service provider to sit down and work out 'have we got a meeting of the minds and are we both confident that we know what we're dealing with here?'

So, that was the sort of nature of the role I had. It was a challenging role at a personal level because I was trying to link and correspond to 23 different service groups in WA. The similar 23 service groups were in South Australia - and the South Australian regime - and at the same time you're trying to meet a corporate objective for the Department of Administrative Services to be advancing that department's role and stature and performance.

So, it was a very interesting experiment I think. And, of course, just going a little further what it really meant was some of those service units were able to do it very well. They tuned into this new regime very well and responded. Others found it very difficult. Their culture wasn't right. In fact, in some cases the function didn't serve itself well to be 'take us or don't take us'. For example, if you're archiving Commonwealth records, which was one of the business units, you don't want some people deciding they're going to archive with Commonwealth archives or archive with a private organisation. Question is 'hang on, what's the function of Commonwealth archives?' It's to hold Commonwealth documents and records. So, I think what happened was that particular service unit stayed in government control.

Now, if they choose to use some other people to store their stuff that's fine but they're in charge of it. You're not having clients saying I'm going to use Joe Blow's archival facility as against Commonwealth archival facility. On the other hand, my old business of design and construction - that was largely sold to private organisations. GHD took a fair chunk of that business and it got absorbed in to that. And the Commonwealth said 'that's no problem' because the Commonwealth money goes to the client agency who asks for somebody to do some facility development whether it's GHD or someone else it's not a Commonwealth issue any more. The Commonwealth issue is what the Commonwealth client gets and who they get to do it. They're not worried who does it just - they're just

concerned that they get a reputable competent group to do it.

DAA Yes.

3/16 GM So, you can see across those various those various functions were things like property management, facility management, fleet management, commonwealth cars that the top judges and politicians use to drive around. What else was there? Warehousing, transport, construction, interior design and fit out. As I say there was 23 different [functions]. Valuation - property valuation. There were 23 different Commonwealth functions that were put in to this one Department of Admin Services. So, it was a big bureaucracy because each of these service units had a line [of responsibility] back to the head office of Administrative Services. I was acting trying to coordinate in a geographic / regional sense but they all had business responsibilities back to a head office so it was a pretty complicated system.

But what happened through that period was each group had to decide could they cope with this? They were given the opportunity of getting some working capital so they had to start running like a little business not just getting money in an annual budgeting sense. They actually got some money to say you're running your business now, if you run out of money you're in trouble. If you make a profit, great. If you don't make a profit you'd better find a way of breaking even at the very least otherwise you're going to go out of business. That led to some people leaving because they didn't like this. It was too much of a change for them [and] they wanted to get out. Other people sort of grabbed it by the throat and said 'I'm going to learn how to do this' and whether they stayed in that business unit with the Commonwealth or whether they then felt comfortable to go and work for the private sector that happened too. So, there was a whole lot of dynamic occurred.

My conclusion was this was a very clever experiment. It was clever because I think it did shake dust off some of the government agencies



who were perhaps a bit complacent a bit [and] used to telling others what they were going to get or what you can't get which I think's the wrong way to go. The client who's got the ultimate responsibility for doing functions ought to be deciding how they get services they need. And I think it shook up people so that, you know, the right people got into the right roles doing the right things.

- 3/18      DAA      So, the key question then, was it a successful experiment?
- GM      I think it was because as I say some of the business units became quite viable. Some of them even got bought out by their staff so they became employee operated businesses. Some got bought by the private sector. Some got held back in government because they realised that was the best for that function so that was what happened with the units. I think it was right for the people because the people who didn't like the new regime left which was a good thing. The people who really grabbed it with both hands started to operate like business people, which is what the government wanted. They wanted that efficiency - best use of money and I suppose people who were in that - in those units that really weren't able to perform they've probably moved on by now too because the business managers would have moved them on.
- DAA      Yes.
- 3/19      GM      I think that's all to the good.
- DAA      I'm going to ask you a curly one now before we move on. When I came to WA in 1971 the key to promotion was service.
- GM      Seniority.
- DAA      Seniority. That's the key word but that changed, didn't it?
- GM      Yes. I think it [did]. I'm not sure when it changed. I think it probably varied in different organisations but it certainly was the case in old public-sector organisations that people expected to get a promotion and certainly they had their eye on who their boss was and as soon as their boss moved either by retiring or dying or getting a promotion,

they thought 'ah here's my chance, I'm in to it'. And yes, that expectation and I'll explain a little later that I had some exposure to that in one of the other roles I've had subsequently.

But it was something I think I said to you when I came from Melbourne back to Perth as Associate Director Projects that was an example where seniority didn't apply. They worked on merit or best prospect for the organisation. Now whether that was because the project managers who were here didn't want to take the extra responsibility or whether the hierarchy decided they wanted to bring somebody younger in who knows but nevertheless I think that was an example where seniority didn't prevail.

DAA     Mmm. Alright well I look forward to your comments in due course because I wrestled with that in my own career also. Right.

So, WA Main Roads Department then?

3/21     GM     Okay well, I was working in that role of Regional Coordinator in Western Australia and South Australia. I quite enjoyed the role it was a very flexible role - a bit of a stressful one because you never seemed to be in the right place when somebody wanted you to interact but it was good to learn something about business development. It was good to learn something about relationship building because that's really what that function was all about amongst clients or amongst even the business units and across the country to make things work. But I had a Secretary in the department at the time who approached me when I was in Adelaide one time. He came over and was talking with staff and he made this public announcement to the staff in a sort of a general meeting that I was going to take up the job as General Manager for a new business unit which was going to be involved in remediation of contaminated sites. The Commonwealth had a number of sites - largely defence type sites - where there was contamination and there needed to be a major push to recover or remediate these sites.

This was something unbeknown to me I didn't know this was coming

over the horizon and I was a bit shocked because I hadn't anticipated it. Also, most of the sites that would be involved would have been in New South Wales and Victoria, potentially Queensland [and] South Australia [but] less so Western Australia so this had implications for me in terms of where would I need to live. I said to the Secretary at the time 'ooh that was a surprise, I didn't anticipate that' and we talked about the circumstances. He said 'you could still live in WA. but I knew in my mind that fundamentally all of the work would have to be on the east coast. And so, living in WA was not going to be a practical solution you know, I didn't grow up in the navy [and] I'm not used to sort of living away from home for six months at a time and it wasn't something I was really wanting to do.

DAA I see. Right.

3/23 GM So, I said to the Secretary on that evening I said 'would you approve my going on a secondment to Main Roads in Western Australia?' and he said 'yes' which is still a surprise to me today as to why he would say yes but nevertheless he did. The background to that was that I had been contemplating just what my next move would be. I could see this Department of Administrative Services role being part of an experiment and not lasting forever.

I'd had some discussion with Ken Michael the Commissioner of Main Roads about possibilities in WA and we'd had some preliminary discussions about my providing some support to him. I don't recall very clearly now about those circumstances but I certainly spoke to him after I'd had this discussion with the Secretary in Adelaide and I started a secondment at Main Roads as a Director of Corporate Projects, I think it was called, and the purpose was to help Main Roads develop their project management and contract management capability.

So, I started a secondment from the Commonwealth with Main Roads to take on that role which I did for about two and a half years. We developed more project management skills. We went through an

amount of training. We got many of the project managers in Main Roads connected to the Project Management Institute [of the USA] and getting them accredited through passing an external exam and at the same time we boosted the contract management capability in the department. So that was I think a very useful exercise and I suppose I was grateful for the opportunity of escaping having to move out of Perth because I had a young family going to primary school.

- 3/25      DAA      Well these are factors, aren't they?
- GM      They are. My wife - I'm not sure whether my wife had started work at that stage but my three kids were all in primary school and subsequently my wife got a job working here too. I enjoyed that time with working at Main Roads with Ken. I knew Ken. I knew a number of the other people in Main Roads, engineers in Main Roads. I'd been at university with some of them - and like-minded people.
- Subsequently I'd regard Ken as one of my mentors because that period was useful and he's been a good confidante whenever I wanted to discuss things with him.
- DAA      You worked for two and a half years with the Main Roads Department in WA?
- 3/26      GM      Yes, I did and, of course, I was on secondment all that time so it was a very long time to be on secondment. I suppose around about the two and a half-year mark my boss from Canberra rang that's the Secretary of the department - and said 'hang on, hang on, this has been going on a bit too long, it's about time you got back here'. I thought about it and I thought the prospect of going back to Canberra was not good for me for a couple of reasons. One was the disturbing of the family which I didn't feel inclined to do but also, I was concerned that I didn't quite know what role I'd have in Canberra. It was sort of pretty open-ended and I guess one of my personal beliefs was even though I'd worked for a Commonwealth agency I'd never worked in Canberra. I'd gone back and done relieving duties in Canberra. I'd acted at sort of SES level in Canberra at different times so I had a

good relationship with many people in the office in Canberra but I had the view that Canberra was pretty much a public-sector town [and] very status oriented in terms of who you were and what level you were at. And I had the belief that I wanted my three sons to grow up in an open environment where they could choose to develop a career in whatever way they chose [and] to not necessarily be bound by the public sector.

DAA      Okay, we'll just stop there.

4/00      GM      Yes, well, so I finished up saying 'no, I'm going to resign from the Commonwealth [public service]'. So that was sort of a pretty big step because as I said I'd gone from about 1965 when I became a cadet to about 1995 which was this time. I'd had about 30 years working for the Commonwealth and I think very good career. Enjoyed it but I was torn between going to Canberra which I didn't particularly want to do for the very reason I've just explained, as well as not knowing what the trajectory in Canberra would be, as against enjoying the working I'm doing. And I could see a pathway here of making a good career in Western Australia. So, I made a lifestyle decision basically.

DAA      It was another turning point, wasn't it?

4/01      GM      It was another turning point. So, I resigned from the Commonwealth and I was very fortunate that Ken Michael and Stuart Hicks, who was the Director General of Transport, knowing my circumstances gave me the opportunity of acting in an Executive Director role at the Department of Transport. And that role was Executive Director Metropolitan Transport which involved metropolitan transport policy and planning, running the Transperth bus regime, looking after taxi regulation, looking after cycling. So, it was looking after metropolitan transport activities.

I acted in that for about six months. They advertised the job which was vacant at the time - so I was lucky there was a vacancy - and I won the job. So that shifted me out of the public works function - the design, construction, the project management, the contract

management, then the coordination across these business units for Department of Administrative Services, back to the contract project management stuff and then into transport. So that's really what launched me into transport which was really the rest of my career.

DAA Yes.

4/02 GM Department of Transport was great. What happened in that period that was the period where there [were] questions about what would happen with Transperth. It was run by the Transperth operation - was run by the Metropolitan Transport Trust at the time. There was a concern I think in government about whether that was as efficient and as effective as it could be so this was a time when contracting out was fashionable and the government took the initiative to say we're going to contract out the public bus services - the regular passenger Transperth bus services. And so, I had that as a major project with a couple of my directors and we set about the exercise of contracting out certain segments of the passenger bus network.

The first couple of zones were contracted out and were won by the MTT [with a] very effective price relative to the private sector. But they were small, small segments. Okay, so let's go ahead. We said 'we're going to do it so let's go further'. We had a couple of bigger chunks then and the bigger chunks were won by the private sector and then there was the last bit and there was a policy issue then [which] is 'do we maintain some government ownership and some private operation to have competition to see how they perform or do we go the whole hog of contracting out?'

The government decided to go the whole hog of contracting out so we processed that. Ultimately MTT didn't win enough work to justify keeping those two [zones] - I think it was two - small operating areas because they [the MTT] got beaten in the bigger ones and so they [the two small zone areas] got put back into the pool and, basically, we contracted out the regular passenger transport bus services in Metropolitan Perth.

There was a couple of really crucial policy decisions. One was [that] the buses and the depots would stay in government ownership but the operation of the buses would be in private operation. The really important thing about that was that if any of the companies went broke, or failed, if they had to bring on their own buses - if they brought on their own buses there would have been a delay in getting the buses in anyway. If they'd got them in and then they went broke and the buses were in ownership of that company and that company was liquidated the question is what happens to the bus services when those buses are effectively impounded by the liquidator while he sorts out the affairs?

DAA        Indeed.

4/05        GM        The fact that the government buses were retained in government ownership was really important. So that, for instance, if the company went bust somebody would very quickly come in [and] hire all those drivers to drive the buses and you'd be back in motion pretty quickly. So that was a risk management strategy.

The other thing that the government decided was they were going to buy [a] new fleet of buses. They were going to give the operators new buses to operate. We were going to take a while to flow in new buses but nevertheless they're going to bring in new buses and then maintain new bus replacement at sensible times so that the equipment the fleet was in good shape.

So, that was probably one of the biggest activities that I had at that time was to oversight that and I think that was very successful. Two things were part of it. One was to really assess who were in the market for running those bus services and we were both lucky, I suppose, and I suppose fortunate in being able to assess which companies were in the market and which ones would be legitimate bidders. And we actually appointed companies that were already bus operators. In other words, they weren't businessmen who thought they might like to run a bus company. They were bus company

operators who knew what they were doing and really tuned into the tender process.

So, the two important things were obviously getting reputable bus operators which we were able to find and that was a plus because one of the risks we ran was getting a company who didn't have that experience and that capability bidding and then we would have to deal with it. So, we had the benefit of that. The other thing we did was we actually conducted a substantial exercise to work out whose buses would be [bought] to populate the fleet and the decision was made to populate with one company's buses so that it was consistent and spare holdings, and all those sort of things, would be most efficient.

And so, I was involved in an international visit to go and visit bus manufacturers and we tendered it and in that particular case Mercedes came in with what was a fantastically beneficial tender price for their buses on the basis that this would be a contract for replacing the whole fleet over 10 years or whatever it was and the prospect of subsequent replacement beyond the 10 years as they rolled these buses through their life.

I think it really worked well and what happened was, they, the operators, performed well.

DAA      Good.

4/08      GM      Now I'm presuming that's still the case even though that's quite some time ago. And look, the situation was that the contract with the private operators was made pretty tight. For instance, if a bus operator didn't run a service - for instance if one of the scheduled services - didn't run he was penalised financially. In the old regime if a bus didn't run - tough. So, the question was, was there sufficient incentive, [or] requirement, for the old regime to really run efficiently and run every service. When you put the private operator in under contract you're able to control exactly, did they do what they're supposed to do?



DAA Talking about buses makes me think about fuel. Did you get involved in the type of fuel that was used for the buses?

4/09 GM Yes. There was an exercise we were involved in at one stage where there [were] questions about whether we should be using diesel or compressed natural gas. And yes, while I was in this particular role there was an exercise done to establish which was the most beneficial. Now, of course, it was very political at the time because some advocates were for diesel and other advocates were for compressed natural gas because it was seen to be a conserve fossil fuel [measure] and better for pollution and better for particulates and all those sorts of questions.

The particular exercise that we did made the argument that diesel was still the best because diesel was getting cleaner and was available in Australia and the performance of the buses was better and the maintenance was better with diesel. Most of the compressed natural gas buses were actually diesel buses converted which wasn't seen to be the same as designing a bus engine for compressed natural gas. Now that was a point in time that was when a coalition government was in place [and] they were happy to have that outcome. When Labor became [the] government they made the 'decision in principle' they were going to go to compressed natural gas and that is a proportion of the fleet got converted to be operating compressed natural gas and subsequently there's been more of the gas [fuelled buses] produced.

But, you know, that was a point in time when diesel and diesel technology was improving to the extent that it was showing good promise and the technical people liked the diesel whether that was because of practice or whether that generally was better it's hard for me to tell but yes it was an interesting exercise at the time.

Also, things like the time it took to reload compressed natural gas into the buses overnight was an issue for example as compared with filling at a fuel tank with diesel.

4/11 DAA Reloading compressed natural gas is a fairly slow process, isn't it?

GM That's right it was. I think you know that's much quicker now they've worked out ways of doing it but at the time that was one of the impediments to advocating for it.

DAA I suppose there was always the safety factor as well wasn't there?

GM I think so but I don't think that was a particular issue.

DAA No? In practice it didn't prove to be?

GM No.

DAA Okay.

GM So that was a very interesting period. I mean another interesting part of my role then was there was a complaint under the Disability Discrimination Act about the fact that public transport buses weren't accessible because they had three steps to get up to the floor level of the bus and that wasn't capable of being used by people with disabilities for example. So, there was a requirement for us to negotiate with the complainants to overcome that which basically led to the purchase of low floor buses and 'kneeling' buses which is what we have on the system now.

4/12 DAA Right.

GM So that was an outcome of that complaint. It was a very hot topic at the time the whole issue about treating people with disabilities as normal people and trying to give them the same accessibility in terms of ramps to buildings as well as access to buses. And the interesting thing was that I suppose my relationship building skills [were] quite important there because at the same time we had trouble getting people, I think, from Mandurah to Perth and we found that we could get some old tourist coaches which we could operate from Mandurah to Perth but of course they're all high floor so I had to negotiate with these complainants that they would give dispensation to this particular few buses operating on this particular route because either there was going to be nothing or you could augment the service availability by

these buses. So that was agreed as a special purpose exemption.

4/13

DAA Right.

GM So, you know [that was] another interesting aspect of the job I had to do.

DAA You mentioned Mandurah. Of course, these days we have the train service down there. Were you involved with the railway system?

GM Yes, I was involved. Not with WAGR - West Australian Government Railways was a separate operating system including the passenger rail service - but in the strategic planning for rail. The question was 'yes a rail service to Mandurah was proposed. What's the best option for it?' And the master plan that was developed by the coalition government was to go via Kenwick across to Cockburn Central down to Mandurah. Main arguments for that was if you came up the along Kwinana Freeway from Cockburn Central to the city you're going through a fair bit of non-populated space up along the river for example [but] where if you went out via Kenwick you would pick up people on that in that zone that area and ferry them to Perth. Yes, [the journey would take] a bit longer but you're going to pick up more people. You were going to cut off car travel because people could come up to the railway station [and] catch the train into the city rather than bring their cars right through to the city.

So, that was the basic argument that it was seen to be serving more people better by that route. When Labor came in they said 'no, no, no, our policy is quickest trip to the city from Mandurah' and that's what led to coming up Kwinana Freeway, [the] extra bridge over the Swan River at the Narrows [and] undergrounding into Perth.

Their argument was no, not picking up people through that Cannington type area but rather the quickest trip from Mandurah to Perth is what they backed. Legitimate criteria just meant a different design had to be developed.

DAA Interesting. I interviewed Jim Gill and he had some interesting

insights into the railway system.

GM Yes, of course, because he was Commissioner of Railways.

DAA He was, yes. He made some comment and I'll just touch on this briefly that one of the most interesting things he did was ride the trains himself into work in the morning. I won't go any further than that but he said it was really enlightening.

GM Oh yes, I think that's right because you can see how they work, you can see what staff are doing, you can see how the customers are reacting.

DAA Indeed.

GM Of course.

4/16 DAA Yes. Alright so you worked for the WA Department of Transport for how long?

GM From about 1995 which is when I started with them through to 1999. And then early 1999 the Commissioner of Main Roads left and I had a call from the Minister's Office to ask whether I would be prepared to act as Commissioner of Main Roads and I said 'yes, I would' for a couple of reasons. One was it was a Chief Executive Officer role and also, I suppose the comfort I had with the notion of what Main Roads were doing and what they were required to do having been there for a couple of years and having had the exposure in transport moving to Main Roads was you know [a] pretty easy option to agree to.

4/17 DAA Dare I suggest that this was your philosophy of being a generalist coming to fruition?

GM I think so. I mean, once again some flexibility as long as it was good for me, good for what I could contribute then I'd take on the initiative. I've always had the view that I only want to be involved in stuff that I can contribute to. I'm back to that old being pragmatic, wanting to see outcomes, wanting to contribute to outcomes not to fill in time. And so, this was another step up for me. I was asked to step into

Main Roads in early 1999. Subsequently that position was advertised I knew that was going to be the case - but well not 'but' - and I won it so I became the Commissioner of Main Roads. It was a good time. A challenging time because there'd been some changes at Main Roads which had left [it] downsized considerably. A lot of people had left. I think the morale was relatively low, there was some uncertainty about the future and what support Main Roads was getting from government.

So, I saw it pretty much as a rebuilding exercise. I had to rebuild confidence and comfort both with staff and also make sure that the government was happy with Main Roads too. Didn't mean Main Roads wasn't getting jobs to do but, you know, the question is what was the relationship and was it a good one? And so, I set about it. When I went there for example - I said a little earlier I was going to come back to this you asked the question about seniority - when I went in there about half of the senior positions were advertised for filling because there'd been this change and this downsizing had been quite dramatic. And so, there was a question about I think refilling the executive role[s] or readvertising the executive role[s]. It was a fairly harsh treatment that had been dealt out to Main Roads it seemed. When I went in there about half of the executive role[s] had been advertised. It had been advertised in Western Australia only and I thought 'why only Western Australia?' I asked the question 'why only Western Australia why not Australia-wide? If we're going to be a nationally competitive comparable organisation why not nationally and why only half - what about the other half? What's going to happen there?'

So, I made the decision that we'll throw the ball out into the arena and there'll be national advertisement. A couple of the people who were either in senior positions or acting positions in Main Roads at the time were very unhappy with that because they thought that they were entitled to [the] roles. My comment was 'if you're the best person for the job you'll get the job but I want to make sure we've got the best

people for Main Roads for the future.'

But anyway, let me just sort of summarise without going into the ins and outs. A couple of people resigned, of those people one of whom I had a very close relationship with in years previously but I can only presume he didn't want to, sort of, have to deal with the competition that he might have. Of the positions available I suppose all but one effectively went to the people who were in the role acting or in the role previously. They were still the best people for it.

The next one was a young person I promoted because he was the only young person, younger person, in the organisation that applied and so I appointed him. We didn't get people from interstate we got people from the organisation which was a plus for them because they were still the best people for the job and there was one position where of the young people who I expected would have shown their hand [or] put up their hand, only one did and I appointed that person.

The lesson to me out of that was Main Roads has got lots of very good practice and practitioners, very capable people, so that that's great. That's good for the organisation but the turnover was not that high in other words not very much ventilation of the organisation so that was a worry. There was also a gap appearing in the younger age groups there wasn't people coming into the organisation and building up those skills like the ones that I was benefitted from as a young professional. And there was a bit of this question about you know 'there's a pecking order here and this is the way it should stay' rather than being scrambled a bit because if people are good enough to penetrate through then they should be encouraged to penetrate through.

I saw this as quite important and one of the very senior people who was very angry at me at advertising all these jobs - I said to him 'just think about it. If I don't advertise it and I appoint you what might people think as against if I advertise it nationally and you win the job what might people think? I advertise it nationally and you get

appointed to the job there'll never ever be a question about whether you're the right person for the job. If I don't advertise it nationally and I keep it very limited and you get the job there's always the question about is this jobs for the boys? I said I don't want Main Roads to be known anymore as 'jobs for the boys.' I want Main Roads to be known for putting the best people in the senior positions.'

And I think he acknowledged when he got the job that that was the right approach. But before he got the job he was very angry at the prospect of missing out when he had been doing the job in his view doing it well and ought to have the job.

DAA Well of course for a person like that there's an element of risk isn't there?

GM Of course, there is. I understand that but my responsibility as Commissioner was not to staff per se it was to the organisation and the future of the organisation.

DAA Absolutely.

GM It's like my more recent work as a director of an organisation. Your responsibility is for the organisation and of course it has to have some recognition of your staff but you're not there for your staff per se you're there for the organisation and what it does while respecting your staff and encouraging them training them and so on. But if they are not doing things that are compatible with what's good for the organisation [then] sorry, they're not right for the organisation.

DAA Absolutely. Yes.

4/24 GM So, anyway, that was my period with Main Roads till about 2002. In 2002 the Director General of Planning Infrastructure which really was a new portfolio by the Labor government incorporating Planning and Transport. In other words, bring[ing] those two major portfolios together. [It] was advertised and I decided to apply for that job and was given that job. So, I had that job for five years from 2002 to 2007.

4/25 DAA Right. I detect as we've talked that you have gradually moved

upwards to deal with issues which become more and more umbrella issues because you seem to enjoy strategy and policy and the bigger picture. Is that right?

GM Yes, that's absolutely right that's if I've got a claim to fame at this stage of my career it is that I'm in the policy, planning, strategy area. That's the space I enjoy because I can't claim to know all of the fine detail of technocrat work or that sort of busy work at the bottom. There are lots of people who can do that. It's a matter of the picture, the direction and the outcomes they've been working on.

DAA So, you enjoy the big picture?

GM That's right I certainly do. I guess I always have but didn't have the capability of doing it but with my experience now I feel very comfortable in that space.

DAA Yes. The key word is 'enjoy' of course?

4/26 GM Yes, that's right. So, planning and infrastructure was very interesting. Transport and Planning - it was a challenge because the government wanted those things to be better integrated. I think many would argue and I've heard it said that it was a - I don't know whether it was a failed initiative or an issue that didn't bear the fruit that was expected. I think I can understand that but I don't think it was given long enough to work and there were some impediments to it.

For instance, I think I had five major office buildings in my portfolio with different segments of the department. But they were segments that had legacy cultures. They were organisations that had had long life in their culture unrelated to the next segment that had long life in their culture. And there was no move to shift all those people together or mix them up or find some way of resetting the culture other than by trying to persuade people to think more broadly. So, I think if there was a failure in the implementation of that amalgamation it was disturbing it sufficiently to allow it to be reset and rebuilt.

And subsequently, of course, after the Coalition won the next election



they created [separate departments of] Transport and Planning and I think there were people in Planning and Transport who always hoped that it would be separated again, which helped Planning [and] Infrastructure not be as effective as it might have been. But, you know, nevertheless work was done, tasks were done, there was coordination work done, to try and hold everyone together but, as I say, some people would have regarded it as not as effective as it was intended to be or was hoped it would be.

4/28      DAA      I think the term that was used within organisations was ‘silos’. That you tended to have these blocks of vertical activity.

GM      Yes. That’s right and then there were some attempts to shift some functions across to the other parts and, of course, there was resistance to that. Not only that there were people on different award arrangements or different wage structures so then the question was of a particular level in each organisation there was a differential in the salary. So, you ship the people and ‘hang on’ you had the same people on the same level but in the bureaucracy they were on different salary levels, different salary scales.’

So, the lesson there is if you’re going to do an amalgamation think through all of these practical factors and impacts and you’ve got to have a solution to them.

DAA      Mmm.

4/29      GM      But, so, it was a bright idea which wasn’t able to be executed in a way that I think would have made it effective, as effective as it could have been. So, it became a coordination exercise rather than an amalgamated exercise.

DAA      I was involved with the APEA for some years and that paralleling of organisations and salaries and that, was a nightmare for one period of time anyway.

GM      Yes. So, I think I enjoyed that role. As you say it really got me into the policy planning, it got me understanding government better,

interacting with national and state politicians more, or national and state Ministers more perhaps I should say, so that from a career development point of view that gave me some more understanding of the sort of things you have to worry about if you're dealing in policy and planning.

DAA     Alright. Look I think we'll stop there.

5/00     DAA     My name is Doug Ayre and the date today Greg is?

GM       Seventeenth.

DAA     Seventeenth of July 2017 and I'm continuing with the interview of Greg Martin for Engineering Heritage Australia. Greg, I think last time we finished we agreed that we would start off again with your role as Professor at Curtin University and leading on from that as Director of the Planning and Transport Research Centre. So, would you like to elaborate on that please?

5/01     GM       Sure. After I left the state government in the middle of 2007 I was appointed as Professor of Planning and Transport Studies at Curtin University and at the same time as Executive Director of the Planning and Transport Research Centre. The Planning and Transport Research Centre was a collaboration between the four public universities in Perth. So, I really had bosses from four universities even though administratively I was located and serviced in Curtin. The purpose of that role was to provide a link really between government and industry and academics to pursue research in transport and planning studies.

It proved to be a very interesting time. Somewhat of a challenge though because often I found the academics and the people seeking research to be done weren't quite the same sort of people. One of the challenges I had in the role was to find people within the universities - not just Curtin but across the universities - who were willing to take on research projects for government or industry and sort of stick with the agreement they made at the start of those research projects. It was

a tough time, I think, because obviously university people are under a fair bit of pressure with teaching and other research loads too but it was successful in certain cases and quite a lot of work was done particularly with Main Roads Western Australia who took full advantage of that opportunity.

That was for a period of about four years I was at Curtin University doing that role. Planning and Transport Research Centre continues now and it is currently housed at UWA. When it was commenced it was planned that it would rotate between the universities. Now I think Murdoch is not a part of the combine but I think [The] University of Western Australia, Curtin and Edith Cowan are still part of PATREC.

5/03      DAA      What about those universities brought them together in that partnership then?

GM      Well I think when that combination was set up it was on it was on the basis of each of the universities making a contribution to some source funding as well as some government agencies. The Transport portfolio and the Planning portfolio also made contributions. That was the source material and it was intended of course that research grants would be won from the Australian Research Council using some of that seed money as well as perhaps some additional contributions for any particular research program.

It was an ambitious task and I think - I enjoyed it because I also had roles on some of the advisory boards within the university and some of those other activities - so I think it was useful, perhaps didn't quite develop to the extent that I had hoped through the period but it's still persisting so it means that the universities and the government agencies are still satisfied that it's worthwhile.

5/04      DAA      Yes. I came to WA in 1971 and I was very impressed with the planning had been done by Professor Stephenson and indeed we're see the effects of it today, don't we?

GM Yes, that's right. I think that's the case but I suspect that was in sort of the late '50s early '60s that that period was done. It was a long time ago now and I think a lot of that good planning has persisted but also the provisions that were made in that are probably now exhausted and some new decisions have to be made.

DAA Right.

GM That'd be the view I would hold.

In addition to the work at the university I also was appointed as Chair of the National Transport Commission in 2008 which was a very, well, a very prestigious position to occupy. So I was Chair of that National Transport Commission for five years and I think it was an organisation that had run well had been giving good advice to government, all governments as a matter of fact, because National Transport Commission operates under Commonwealth legislation but the members basically of the Board are - sorry not of the Board but of the controlling governments - are from all governments from the Commonwealth, States and Territories so the National Transport Commission basically has to have its work program approved by all governments and, of course, they receive the advice that the Commission produces. So that was an important period of time.

DAA Mmm.

5/06 GM Another role I had at the time I was Deputy Chair of the Taxi Industry Board which was set up in 2009. I was on that Board for about four years and the aim of that Board was to try and give advice to government also about the operation of the taxi industry. Nearly everybody has an opinion about the taxi industry and the aim of this Board was to give advice to government about the operation of the taxi industry.

DAA Right.

GM The other thing that I have been involved in through this same period was as a member of the Freight Logistics Council [of] Western

Australia. I am still a member of that Council and its aim is to give advice. It's made up largely of industry and government representatives to give advice to government again.

All of these roles basically had the theme of giving advice to government and it's always an interesting question as to whether the government asks you for advice or whether you proffer the advice based on what you detect and has to be considered by government.

DAA How do you persuade them to take your advice?

5/07 GM Oh well, I think, my view I may have said a little earlier in our interview that my concern was never about the decisions made by government my concern was all about, always about, the advice that I gave or I was a party to. You can only give your very best advice but if you're not the decision maker you can't take responsibility for the decision.

DAA No, of course. On the matter of transport and strategy where do you see transport particularly self-drive vehicles going with the changes in technology that we're seeing?

GM I think it's inevitable it's just a matter of at what time and with what intensity it comes. I think the technology is there but the technology of the vehicle is one thing and probably the straight forward thing. What's more important is how it interacts with road networks and communities and the regulation - the regulatory regime that has to be fitted around this opportunity. Clearly there's always concerns about safety and how automated vehicles will interact with manned vehicles and I'm not sure that's sorted yet but trials and tests are going on to sort of see how this will work. Potentially it could be very helpful but I think we've got a fair way to go before we really understand it and people are confident about it.

DAA Yes, a lot depends, I suspect, on the environment that a vehicle's operating in doesn't it really?

GM I think so and, you know, it's going to require quite a change of

culture for people who've been used to using cars too and I think a lot of the predictions are that it'll happen very quickly. I'm inclined to think it'll be a bit slower than [rather] than fast because I think governments, while they might get enticed by the idea will have to worry about all the implications of, of such an initiative.

- 5/09      DAA      Yes, I can't help agreeing with you. I remember the introduction of unleaded fuel and it was many, many years until that became the dominant feature, really, wasn't it because I suspect that people gradually phase out the old technology, don't they?
- GM      Yes. Well that's right and of course some of the older cars perhaps didn't perform as well without it. I'm not expert in that field but I think governments have to take a very broad interest in these things and while they get excited by initiatives and pressure from companies and other entrepreneurs who want to introduce things they still have to worry about how it's really going to be embedded into society.
- DAA      Yes. On the subject of planning and I mentioned Professor Stephenson did you have any involvement or interest in what was called 'System 6'?
- 5/10      GM      No, not particularly. A lot of the detailed planning by the WA Planning Commission - Western Australian Planning Commission - is dealt with through their statutory planning type areas and I didn't have a direct involvement in that.
- While I was the Director General of Planning and Infrastructure and I was an ex-officio member of the Planning Commission a lot of the work of the Commission was delegated and of course supported by planners within the department but it ran through a separate avenue compared with being effectively the administrative head of the department.
- DAA      Mmm. I must admit though I was impressed with 'System 6' it was really comprehensive.
- 5/11      GM      Well I think the West Australian Planning Commission has a

reputation of being quite unique in Australia. There aren't planning regimes in other states that have the coverage and provide the benefits that WAPC does here. That doesn't mean to say people don't sometimes find difficulty with what's decided but I think the planning is much more orderly here than it has been in other places so it is an institution that has been worthwhile.

DAA I couldn't agree with you more. As I say I was very impressed. Alright, so, you obviously enjoy the policy and strategy area then?

GM Yes, I've said that previously and I guess it's a combination of what I've learnt over my career starting off I suppose in technical areas but all those, you know, the design construction of buildings and engineering works and then progress basically through to transport where I've spent most of - or project management I think I mentioned - and transport where I finished up.

But you've accumulated all of those ideas working in different environments working for with different people and working on different projects. So yes, you get to the point where you believe you can see a bigger picture and a forward-looking picture - and all of these things need to be guided by that sort of forward view - that visioning of what can be.

And I suppose the benefit from an engineering perspective is that you can do visioning but it's always got to be practical, it's got to be implementable, not too 'blue sky'. Blue sky has its part but you've got to also be able to see how you can make a real difference.

DAA Indeed.

GM Now I guess I tried to make that point when I was given the National Transport Medal by the Institution in 2010 and I went on the eminent speaker program as is usual for awardees and my topic for that particular round of presentations was 'Transport and public strategies - linking policy goals to action'.

So, that's the perspective I hold now is you can have policy goals but

you've got to be able to implement them.

DAA Yes.

GM Otherwise you don't get any benefit.

DAA No. Thinking through the policy is all very well isn't it but it's got to be able to be applied?

GM Sure, sure. And that doesn't mean you don't stretch yourself. It's easy to make policy prescriptions which aren't very daring but nevertheless no matter what policy you propose it's got to be one that generates benefits and it's got to be able to be achieved.

DAA Yes, I suppose 'thinking outside the square' is a challenge though because you've got to carry people with you, haven't you?

GM Yes, that's right. Yes, there's a balance. Sometimes there's a dilemma about staying with what you know versus sort of really stretching out. I think you've got to try and have a combination of both.

DAA Yes.

5/14 GM You mustn't get too far ahead of people otherwise you find you can have disappointments in trying to move policy. On the other hand, if you don't create some disturbance and some change well then you don't advance.

DAA Alright. Have you had any particularly special projects over your career?

GM There's been a number. I remember outlining my role with the Omega Navigation Facility Tower in Victoria. Another one more recent was during the 1990ss when I had responsibility for the public transport bus system in Perth. The team I was with were responsible for contracting out the public transport bus system - Transperth bus system - and that was a really exciting project because it meant that we had to, sort of, make sure services were continued. We had to be able to show benefits to the state for the privatising which was the government policy at the time.



I think it was very successful on two counts. [One] was the engagement of prospective contractors to run the services which we took action to make sure we had people who really did know how to run a bus service. I think I may have mentioned that before.

Then the other side of it, of course, was the government's decision to completely replace the bus fleet and retain ownership of the bus fleet for the new contractors to operate the bus fleet.

Now I reckon that was a very successful program and that still operates today and many other states have followed that sort of mode. And, of course, we had the benefit when we started that project was [that] there'd already been good reform done in public transport in Perth where for example there was integrated ticketing so you could go from one mode to another from bus to rail, or bus to ferry, using one ticket where other states had different operators who had their own ticketing system which made it very much more difficult for riders to transfer between vehicles and modes without having to, in effect, pay a new fare.

So that was an example of something that was quite massive and I was fortunate in having some people working with me who were very clever at making that happen.

DAA      It's something that comes over strongly to me. When I have visitors in here, from the UK particularly, they always speak very strongly about our transport system - our public transport. The way the buses and the trains integrate. They think it's marvellous and so do I but so many people seem to take it for granted don't they whereas it isn't always that simple, is it?

5/17      GM      I think one of the things that I learnt very early when I was involved with the public transport was in the customer satisfaction surveys that we ran, and are still run, the people who use public transport give it very high rating. The people who don't use public transport give it very low rating.

That's curious and I suppose one of the objectives that governments had for a long time was to try and get more people to try public transport with the hope that they'll be converted and make more use of it. But yes, it's quite a dichotomy between those who use it and think it's good versus those who don't use it and damn it.

DAA Yes. I wonder why they don't use it?

GM Well I guess they are used to using cars or they remember perhaps transport in days gone by when it wasn't as modern and efficient as it is now. As you mentioned, the linking up between the services are very good now. Timetables are relatively reliable subject to buses having to interact with vehicle traffic on roads but, no, I think the integration is very good.

5/18 DAA Were there any other particular projects?

GM Oh, look I sort of struggle to think of particular ones and one of the things that I guess I've got to say that in organisations I've been leading in more recent times many good things were done. For example, while I was Commissioner of Main Roads the second Narrows Bridge was finished. But, of course, it was initiated before I became Commissioner of Main Roads - the work was being done. So, when you're head of an organisation you get to be part of, and to celebrate, lots of achievements of projects but it's really the continuum that these organisations are working through with their programs and the funding they get from government to be able to see it through.

So, sometimes you're lucky to be there at particular times when you can have an input. Other times you're lucky to see it go through. I had quite a lot of involvement in the planning of the railway extension from Perth to Mandurah including the first option that was to take the line from Cockburn Central out to the Armadale line and bring it into Perth that way.

That was under a coalition government. When Labor came in, in

2001, they decided they were going to take it straight up the freeway so they shortened the travel time from Mandurah to Perth. So, these are the sort of activities I was involved in. Both were viable options but there's a policy decision made by government on particular criteria and so that would be another one that I had quite a lot of involvement with. But, of course, with many other people - many other good people - working on that project.

DAA Indeed. Yes, I often say to my wife you'll hear me say 'I did that' or I did this' and you must understand that I was a member of a team'.

5/20 GM That's right. I think one of my philosophies always been that it's not me it's who I can help, who I can advise, who I can work with, who I can bring to the table, are the things that I focus on rather than claim personal compliments for the work I've done.

DAA But if you're anything like me you do feel a strong affinity with what you've been involved with.

GM Oh, of course, of course, and so should everybody who's involved with the project but it takes quite a lot of people to make a project a success.

DAA Indeed, it does, yes.

Alright, so you went on to establish your own consultancy I think?

GM Yes, I did. After I left Curtin University in 2011 I started my own consultancy. It's always been very low key. I made a decision very early that I wasn't going to spend a lot of time tendering for work. I was going to rely much more on people approaching me to provide input to projects. So, I've worked on a number of exercises over time where I've been as an individual providing advice and guidance on particular projects. I still do it but it's a low intensity activity and as I said I didn't spend a lot of time I made the conscious decision not to employ people not to get big so it became really just a sole practitioner consultancy providing advice on bigger projects through other organisations or providing advice personally to government or

to industry if that was what was required. And it's been useful.

I think I've done quite an amount of work with local government. I still do. I have had quite a lot of involvement with state at different times on for instance the Fremantle outer harbour proposals. I've been involved in an amount of that sort of work in the past and that's obviously a project still to happen but there's been many studies done up until now to sort of guide government in how that might go forward. So, it's been satisfying. It's kept me interested in the sector.

DAA     Indeed. Well not only interested in the sector but given you some pleasure I suspect?

GM       Of course, of course.

DAA     Because it's not something you can just withdraw from, is it?

GM       No well you can sort of retire absolutely but my view was no I would do this providing I could, if I was asked, providing I could add value and providing I would get a kick out of doing that work I'd do it. But if it wasn't something that I thought I could add value or it wasn't something I had a sufficient interest in well then, I wouldn't take the work on.

DAA     Nice to be in that situation though, isn't it? You can graciously decline?

           Alright. You went on to be involved with Engineering Heritage?

5/23     GM       Look, I didn't have a great deal to do with Engineering Heritage. I was conscious of it and I was aware of some of my engineering peers who did play quite a big role in Engineering Heritage but I didn't directly. I had had quite a lot of involvement with Engineers Australia in my earlier career. I think I may have spoken about that already. When I was in Victoria in the late '70s or early '80s I was pretty active. I was on the Structural Branch of the Institution there. I was Chairman of that branch for a while. I was also the Victorian appointee on the Civil College Board for a while but when I transferred back to Perth from Melbourne that dropped away and, in

fact, I spent a lot of my time working in the project management area.

There was an organisation called the WA Project Management Association that was being run by I think mature project managers in WA. They formed this association because they didn't feel there was any sort of organisation that allowed project managers to get together and share experience and try and build up a body of knowledge in project management. So, I was involved in that for quite a while and was president of that for a period. That organisation then basically got transferred in to the Australian Project Management Institute – [the] Australian Institute of Project Management that exists now and I was a Fellow of the Project Management Association- [I was] a Fellow of AIPM and which I'm still a member of. So, my focus went much more to project management from the engineering because that's where I was working.

DAA Mmm.

5/25 GM I was working in that field and, I think, while Engineers Australia perhaps has adopted more of a project management element now, at that time it wasn't very strong. They were still pretty much back with the traditional disciplines and so, as I say, that's where my direction went and I spent a lot more time working in the professional organisations in project management.

DAA Yes. It's interesting though isn't it that Engineering Heritage have asked me to do this interview with yourself and your background, as you say, is project management so there's obviously an assimilation going on there which values the project management and the strategy aspects of engineering I think?

GM Of course. I think, you know, one of the features of engineering is its very broad and I think that's continued to this day. Even in the most recent statements I've heard from the Presidents of the Institution they are saying you need to have a very broad background in order to be able to practice engineering these days.

5/26      DAA      Mmm.

            GM      Clearly there are people with very narrow specialties but a great many engineering graduates are working in very diverse fields nowadays

            DAA      Indeed. So, you've been involved with Engineers Australia then?

            GM      Well, I just recount I joined as a cadet in 1965. I think in about my second year at university and have been a continuous member since that time and that went through the various grades from being a Graduate to a Member. I was made a Fellow in 1988 and, then, as I mentioned an Honorary Fellow in 2013. That's quite a privilege to be made one of the 100 Honorary Fellows.

            DAA      Mmm.

5/27      GM      So, I've always had an affinity [and] maintained the connection. Perhaps haven't been active in the Institution in terms of participating in its organisation but always regarded it as an important institution and also one that did maintain its standards which I think is really important.

            DAA      Yes. Alright, we'll just stop briefly there.

6/00      DAA      So, what about people that have been significant to you?

                    Would you like to make some observations there?

            GM      Look there's been quite a number of people. I can go right back even to my high school days in terms of particular Masters who I think gave me extra challenges and fed me with more work to try and make use of my ability and that continued through university. I completed an Honours degree so I believe some of my supervisors at university though a Bachelor Degree were very important to me. The same as when I went to California and did a Masters degree there I worked with a couple of people who were world renowned academics who were my supervisors.

                    So, they were all very important people in terms of, as I say, challenging you, giving you opportunity but, sort of, making sure that

you really had to rise to the occasion rather than just see life go past.

In terms of my time in the Commonwealth as I think I've said when I started work I worked through vacations as a student and then when I started work I had some people who are really important to me.

People like Frank Statham who was the State Director of Department of Housing and Construction or Department of Works in those days would be known by many of the old and bold that still are around because he was a very high-profile guy. I had other people who I worked with. People like Les Fenton, Colin McWhae, Jim Buchanan, were people who were special.

Then when I went to Victoria working in the Department of Housing and Construction in their head office Norm Sneath and Charles Bubb were two people who were very prominent. I think Norm, sort of, retired to Canberra and I think passed away not that long ago. And then much more recently in Transport and Roads Dr Ken Michael previous Commissioner of Main Roads. As I say I went to work for him when I was on secondment from the Commonwealth. He's now been Governor of Western Australia and continued on. I notice he's even President of the WA Cricket Association right now. And Stuart Hicks who was a Director General of Transport who basically took me on when I left Main Roads and of course he was also a - he's a former Chair of the National Transport Commission prior to the time I did that role. So, they're a few of the people that have been very influential for me.

6/03      DAA      Yes. It's often in retrospect you look back and realise how influential people have been don't you?

GM      Yes. Yes. No, I think mentoring is an important subject. Some people think it's valuable other people think it's a bit fancy but I think mentoring is useful and mentoring doesn't have to be a really formal exercise in my view. If you develop a relationship with somebody who you can ask for advice and assistance without fear or favour and you get it that's what I call mentoring and, so, it doesn't have to place

really big obligations on people but the nice thing is that when you do seek some advice or assistance it's willingly given. That's the case. I was in Rotary for about 24 years and my particular interest was working with young people in Rotary on Rotary Youth Exchange and Group Study Exchange programs and I saw that as a really important mentoring type period for these young people to make sure that they got the most out of their particular activities. The Youth Exchange was a year overseas living in a foreign country growing up - learning to grow up - and Group Study Exchange is a short-term young professionals program where a team goes away to another country for a period.

Those are the sort of examples where I think mentoring or giving people life development activity exercises are really important.

DAA Indeed, and I can look back at my own life and career and identify people that have done me great good service.

GM Yes, and been very influential. They also influence your attitude and your thinking too. You know you watch these role models and you take from it what you think is good.

6/05 DAA Yes, there's an element of symbiosis there isn't there?

GM There is. There is.

DAA Okay. So, career highlights, public awards?

GM Well as I said I've been very fortunate in having recognition for different things. I think you know getting to Fellow status in professional organisations is always regarded as good. That's not taken for granted. So that was good and particularly becoming an Honorary Fellow of the Institution was a real surprise. It came out of the blue for me and I was delighted. I've been awarded a Member of Order of Australia in 2014. Prior to that in 2008 I was awarded a Public Service Medal. So, they came out of my work in the public sector.

I mentioned Rotary a short while ago. I was in Rotary for 24 years



and I was awarded 'Paul Harris Fellow' twice in that period so that's a prestigious award within the Rotary movement. So, they're examples of some of the nice things that have happened.

Of course, the National Transport Medal was also pretty special which was awarded in 2010 by the [Institution's] National Committee on Transport [Engineering]. So, yes, I think I've done very well.

DAA Yes. I also think you're very modest. It's natural to suppress these things but they are important to you, aren't they?

GM Yes, they are. In fact, prior to meeting with you today I had a look through some of my records because I was just trying to check some of these dates and there is a lot of material there that you could talk about if you chose to but we're just touching some of the highlights I think.

DAA But there's a great deal of pleasure in looking back isn't there?

GM Sure.

6/07 DAA Yes. Alright so you've had some recognition which is obviously given you a great deal of pleasure.

What about academic honours? You've been a professor, obviously?

GM Yes. It's interesting. I think it would be fair to say it was a title reflecting in effect a salary level for me. To be a full professor I think these days you have to have at least a PhD. I didn't graduate to a PhD although when I was at Berkeley I was given a hint that perhaps they were going to offer me [a] research assistantship to do it but of course I was already contracted to the Commonwealth government to come back after a year, which I did. If I'd been given a hint that that was possible earlier I may well have tried to take that up. But, so, at the university I was a professor basically at a seniority level you might say or a salary level rather than a full academic professor.

6/08 DAA But it is a compliment though?

GM Of course. Of course, yes. I mean it was important to have that level

to be running a Transport Research Centre - Transport and Planning Research Centre - and yes, I mean in practical terms and in experience terms I probably rated that sort of level. I clearly rated that level otherwise they wouldn't have bestowed it on me but [within a] university you can imagine that without having what they might regard as proper academic qualifications some academics would regard that as perhaps not quite right. But that wasn't something that affected me. My concern, as I said earlier, was that I sought out [and] searched for people in the organisations of the university who could provide the sort of research support that was needed for the questions that were being asked of the Centre, and those who weren't able to respond adequately well we just didn't pursue with those people. We rather spend our time working with people who were ready to work with us.

DAA Yes. Alright. Well you are supposedly now retired then Greg, are you?

GM Yes, I regard myself as retired. In fact, certain organisations have said to me 'you're really retired, aren't you?' and I said 'yes, I am but I'm just doing some things to keep myself busy'. As I say, that consulting business I still have but it's very low intensity and low activity level. It comes in little bursts but it's not by no means a heavy load. I chair a not-for-profit organisation called Community Vision which is providing independent living services for people with disabilities, the aged and youth. I also am on the Board of [the] Australian Building Sustainability Association which is based in Sydney but it's a national organisation. So, I'm on those couple of not-for-profit organisations that just provide some extra things to do.

And it's fair to say that in going on to both of those Boards I expected it would be, you know, reasonably straight-forward where I could offer some advice and assistance but in both cases, they have real challenges as organisations as many not-for-profits do these days. So, it involves a lot more time and input than perhaps I anticipated when I

joined.

DAA I suspect you enjoy the challenge though?

GM Of course. Of course. I mean, issues of working [for] government, working for the private sector, working for not-for-profits, lots of the same issues apply. It's just the same sort of issue but in a different environment, different circumstance.

DAA Yes.

6/11 GM So, I think your experience in any of those areas is transferrable excepting always that job content knowledge isn't always as strong as it could be if you're working in other areas but once you get into senior management levels the challenges are very similar. The problem's the same it's just in a different location.

DAA You mentioned being on various Boards and I suspect that the composition of a Board with skills and expertise is crucial?

6/12 GM Yes, it is. You do need to make sure you have a diversity of people. You do need to make sure you've got people on the board who want to be there. This is not just a Sunday picnic. This is a serious job. Because as a Director, of course, you have personal liability for the performance of the organisation and there's plenty of regulation around Boards be they not for profit, or for profit. So, you do need to be serious about the decision, or the consideration you give things and the decisions that are made. Preferably you want the Board to come to a consensus although you don't want everybody to be doing 'group think'. You want there to be a good amount of deliberation before you get to a decision.

But, yes, it is it is interesting [and] that's good. And, of course, if you're not interested in being on a Board or you find it unpalatable then you should get off and let somebody else take your place

DAA Well I often thought about that myself working on the theory that it's a good man that knows when to quit and I'm not suggesting that you would need to quit but people don't seem to have a good appreciation

of when it is time to move on do they?

6/13      GM      No. Some people, and it occurs on Boards, where people believe – well, how should I put it - they feel they have a duty to the organisation. They believe they're making a real contribution and they're very keen to stay on but providing they are making good contributions [that] is fine. I think that's an essential requirement. If you're not making a good contribution then really your fellow Board members should be sending you the signal that time's up.

But at the same time, I think there does need to be turnover. There is always the risk that you start staying on the same track, you have the same thought process, the same thinking, the same inclination, the same attitude you're bringing to it. And, of course, the dynamic of what happens in our society these days things are changing all the time. So, I really do think that people should be appointed to a Board for a term and maybe a second term but there should be a sunset where they really have to move off.

I think that's for the good or any organisation. Some people are special - they can really maintain freshness and clear thinking and good thinking for a long period of time, but I'd say even in those circumstances it's time to turn the Board over. And there's something to be said of course for turning it over, not holus-bolus, not everybody all at once. In other words, a rolling program of change is preferable.

But I must say at the time if Board members are not performing, or not contributing, then the rest of the Board through the Chair needs to take action to move them on. And that's been the case in the organisations that even these last two that I'm still a member of we've had to take action at times to say to somebody it's time to move.

DAA      Yes. Yes, it's a very delicate situation, isn't it? I know in my own case I've managed to reassure myself by saying well I don't or haven't possessed the attributes that the organisation then wanted so it was time to move on.

- 6/15      GM      I think that's right. There's no dishonour in moving off a Board.
- DAA      No. Not at all
- GM      Some people see it, as perhaps a rejection of all the good work they've done but no, that's not what's intended at all. I mean you give recognition for the work done but I think it's just natural that you should change things and let a bit of air blow through if I use that term - a bit of ventilation of the Board - so that there's some fresh thinking or some challenges about are we sort of just locked in a particular position rather than seeing what could be done better for the future?
- 6/16      DAA      This leads me towards the end of this interview and asking you the question 'what advice would you give to someone who was starting off their professional career?' You notice I haven't just said engineering?
- GM      Sure.
- DAA      Their professional career.
- You've talked about mentors, we've talked about keeping fresh, we've talked about moving on. What advice would you give to people?
- GM      Look, I think, the sort of things I would be saying to somebody is get yourself a good qualification and of course the expectation is it's a higher-level qualification as time goes by now but certainly make sure you aspire to get the level of qualification that's going to place you in a good position and bring you respect in the profession you're joining.
- Then I think make sure that it's not too narrow. Make sure you're ready to build your general education and if that means some other qualifications be prepared to take that on and I guess that follows a little bit my philosophy of what I've done.
- But make sure that you are gaining good experience all the time. Look for opportunities, look for responsibility, and take it. Don't sort of wait for it to happen or wait for somebody to bestow it on you, go

looking for it.

I think young people these days are a little more assertive and I think that's a good trait as long as it's not too much. Accumulate experience, accumulate contacts, develop networks, test yourself in areas you're not familiar with or you may be uncomfortable with. Public speaking for example. Make sure that you position yourself so that you are confident in making presentations. And I think be ready to make career moves at times when you think you're there's an opportunity that looks good [but] maybe a bit daunting. But don't undersell yourself and also don't let yourself stay in one place so long as to feel yourself - or get some signals - that perhaps you're getting a bit staid and are not taking advantage.

So, you need to have a pretty good element of ambition in what you do. Stay long enough to really achieve things but don't stay so long as to be left behind.

I guess that's in a few words my philosophy about how a young person should approach their professional life.

DAA Mmm, well thank you for that. If somebody had told me that when I was 18 I would have been a lot wiser.

GM Well everybody's a little different of course but I think they're broad principles that have served me well and I guess I've been lucky. Sometimes I've been pushed into doing things that I perhaps hadn't anticipated. My wife's always been very good at saying on a couple of occasions [when] I said something looks interesting she said 'well go for it'. And you think oh, it might be a bit hard. She said 'go for it'. And I think that's important too. You go for it - even if you miss you've learnt something.

DAA Yes.

6/19 GM Some things come back to you. I remember on one occasion I went for an interview and I got some feedback afterwards and it had really said to me 'you had some credentials that you should have been

promoting at that interview that you didn't bring to the fore'. And I think there was an occasion when I got the job anyway but I got this feedback. So here you are, this is a mentoring exercise where somebody said to me afterwards 'you had a couple of features of your background [in] your career that you should have highlighted which would have made an even stronger case'.

And the other thing I'd add too is if you are applying for a job, don't be frightened to talk to somebody you trust. Not necessarily somebody in the same profession but somebody that you know. Somebody you trust [and] try out your approach on them and see what advice they'll give you. Sometimes they give you some insights about you that perhaps you're not as alert to as you think you could be. That's been valuable to me in the past too.

DAA Yes.

6/20 GM So, don't be too selfish or - what's the word - insular to only think you're the one who's writing an application. You're not wanting someone else to write your application but test somebody else with what you're planning to say and see if they have some insights that will help you write a better application.

DAA Yes. Alright. Well I think I've come to the end Greg. The question is, is there anything else you'd like to add?

GM No. I've appreciated the opportunity of talking. I've perhaps rambled over quite a lot of things that have happened in my years but I look back now - that's 1965 to 2017 - it's not a bad stretch and look I've enjoyed every minute of it. I've been very lucky, I've had great opportunities, I've had great support and the few embarrassments or disappointments I've had like everybody probably has have not dented my enthusiasm for doing a good job, whatever I work on.

DAA Good for you. I'm sure that's right. It comes through everything you've said. Alright well, thank you for talking to me.

GM Thank you very much Doug.

DAA I found it fascinating. Thank you.

GM Thank you.